Architecture Portfolio

Thaddeus Chu

WORK EXPERIENCE

2024 REVIT WORKSHOP TEACHING ASSISTANT
Daniels Faculty / Toronto

2022 ARCHITECTURAL DESIGN INTERN
P&T Architects Ltd. / Hong Kong

2021-2022 ARCHITECTURAL INTERN
Wong & Ouyang (HK) Ltd. / Hong Kong

2019 SUMMER INTERN
KLS Partnership (HK) Co. Ltd. / Hong Kong

EDUCATION

2023-2025 MASTER OF ARCHITECTURE
University of Toronto

2019-2021 BACHELOR OF SCIENCE, ARCHITECTURAL STUDIES
City University of Hong Kong

2017-2019 ASSOCIATE OF SCIENCE, ARCHITECTURAL STUDIES
City University of Hong Kong

COMPETITIONS / EVENTS

2021 VIRTUAL STUDENT PROJECT EXHIBITION 2021
Hong Kong

2019 4TH ANNUAL INSPIRELI AWARDS COMPETITION
(FINALIST IN ARCHITECTURE CATEGORY)
Prague

2018 GUANGDONG GRAEATER BAY AREA ASSOCIATION OF SOUTHEAST ASIAN NATIONS INTERNATIONAL COLLEGES AND UNIVERSITIES BAMBOO CONSTRUCTION COMPETITION
(MERIT PRIZE)
Guangzhou

2018 MASTERPIECES - 18 HOUSES DESIGNED BY OUTSTANDING ARCHITECTS EXHIBITION
Hong Kong

CONTACT

+1 (437) 999-7141
thaddeuswhchu@gmail.com
Toronto, Canada
linkedin.com/in/thaddeuschu/

TECHNICAL PROFICIENCY

Revit
AutoCAD
Rhinoceros
Grasshopper
SketchUp
Enscape
Blender
Illustrator
Photoshop
InDesign

ARCHITECTS

WONG & OUYANG (HK) LTD 王歐陽(香港)有限公司
• 27/F, Dorset House, Taikoo Place, 979 King's Road, Hong Kong 香港英皇道九七九號太古坊多盛大廈二十七樓
• Tel電話：(852) 2968 1881 • Fax傳真：(852) 2968 1771 • Email電郵：wohk@wongouyang.com • www.wongouyang.com

22 June 2022

To Whom This May Concern,

Re : <u>Employment Reference Letter</u>

Mr Chu Wing Hei, Thaddeus has been employed as Architectural Intern at our office from 1 June 2021 till 24 June 2022.

Mr Chu has been assisting our team with University of Hong Kong University Drive Tech Landmark Development, Residential Development at Repulse Bay, and Proposed Commercial Development at Topside of West Kowloon Station High Speed Rail Station. He was involved with design coordination, statutory submissions and tender drawings production.

Mr Chu is always proactive to learn and has worked diligently throughout his time at our office. Mr. Chu is able to work independently after receiving directions from his supervisors. All of his supervisors have given high regards for his working attitude and outputs.

We thank him for his contributions to the projects involved.

Yours sincerely
For and on behalf of
Wong & Ouyang (HK) Ltd

Albert Chan
Executive Director

DAF/RC(F)

• PRINCIPAL CONSULTANT
LAW WO HEI 林和祺 BBS JP FHKIA RA AP
• SENIOR DIRECTORS
ARTUR AU-YEUNG 歐陽治經 FHKIA RA AP
JOHNNIE Y.L. LAI 黎裕良 HKIA RA AP
SUSAN S.W. LEUNG 梁爽慧 HKIA RA AP
• EXECUTIVE DIRECTORS
MARGARET Y.W. WONG 黃燕華 HKIA RA AP
DANNY T.Y. TANG 鄧子貽 HKIA RA
SUE S.C. LING 凌少芝 HKIA RA
ALBERT C.Y. CHAN 陳頌康 HKIA RA AP
• EXECUTIVE DIRECTOR (MAINLAND)
CHAU YUET CHU 周月珠 HKIA RA AP
• DIRECTORS
TOM T.N. CHEUNG 張子梅 HKIA RA AP
CHUCK C.T. NG 伍俊聰 HKIA RA
KO SHAN 高珊 HKIA RA
• DIRECTOR (MAINLAND)
DERRICK C.K. LEE 李志高 ARB(VICTORIA)
• COMPANY SECRETARY
CALVIN K.Y. IP 葉家恩 CPA
• ASSOCIATE DIRECTORS
KAMMY S.L. WONG 黃秀蓮 HKIA RA AP
WAYNE W.K. SO 蘇永基 HKIA RA
KENNY Y.F. LAM 林超輝 HKIA RA AP
EDMOND W.C. FUNG 馮穎川 HKIA RA
LI FUK MING 李福明 HKIA RA
WINNIE W. LAU 劉穎 HKIA RA
• SENIOR ASSOCIATES
JIP C.M. CHU 朱志文 HKIA RA
MATTHEW S.C. YU 俞承志 HKIA RA
ATHENA K.Y. CHAU 周菊欣 HKIA RA AP
• ASSOCIATES
KENNETH W.K. LEE 李偉健 MHKIS MRICS
ELAINE K.Y. TANG 鄧潔怡 HKIA RA AP
SHARON S.I. CHAN 陳美茜 HKIA RA
ERIC K.P. CHUNG 鍾創琛 HKIA RA
IVAN H.S. LAM 林翰生 HKIA RA AP
JOSEPH K.L. WONG 王嘉林 HKIA RA
KELLY Y.L. LEUNG 梁銘玲 HKIA RA
• EXECUTIVES
ANNETTE Y.Y. YEUNG 楊欣欣 HKIA RA
EVA Y.W. CHAN 陳穎華 HKIA RA
• EXECUTIVES
KENZIE H.S. LO 勞顯斯 HKIA RA
REX S.H. TANG 鄧肇康 HKIA RA
WING W.Y. TSE 謝詠兒 HKIA RA
DANIEL K.H. FUNG 馮敬謙 HKIA RA
AMAN Y.K. POON 潘毅淇
RYAN H.Y. IP 葉漢英 HKIA RA
MICHELLE M.S.LOK 駱文心 HKIA RA
MARCO K.Y. SIU 蕭鈞賢 HKIA RA
FRIENDY L.S. LEE 李麗媛

WONG & OUYANG GROUP OF COMPANIES • WONG & OUYANG (HK) LTD. • WONG & OUYANG (CHINA PROJECTS) LTD. • WONG & OUYANG (SHANGHAI) LTD. • WONG & OUYANG (MACAU) LTD.
CORPORATE MEMBER OF HKIA 香港建築師學會公司會員 CORPORATE AFFILIATE OF HKIUD 香港城市設計學會公司會員 SILVER PATRON MEMBER OF HKGBC 香港綠色建築議會白銀贊助會員 ISO 9001:2015 ISO 14001:2015
A6 - SIN - rev69 - 2/2022

CONTENT

I PROFESSIONAL EXPERIENCE

HKU Tech Landmark I-IV
Institutional 6

West Kowloon Station
Topside Development
Commercial + Retail 9

Flatiron by Meridian
Commercial + Hospitality 11

II ACADEMIC PROJECTS

Lunar Lava Tube City
Extraterrestrial Habitat + Parametricism 14

The Seamless Shift
Affordable Housing 22

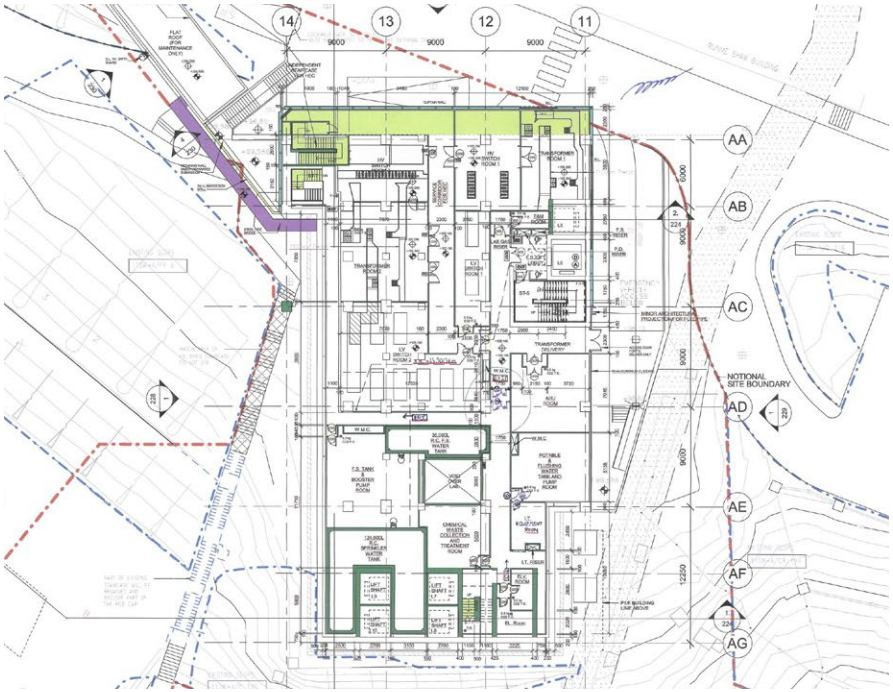
Reimagining Downsview
Urban Planning + Mixed-Use 30

INCUBATOR
Mixed-Use 36

I Professional Experience

HKU Tech Landmark I-IV

Wong & Ouyang (HK) Ltd.



Location: Hong Kong
Project Size: 43,500 m²
Status: Under Construction

Involved Phase: Design Development, Construction Documents

Working Environment: Revit, AutoCAD

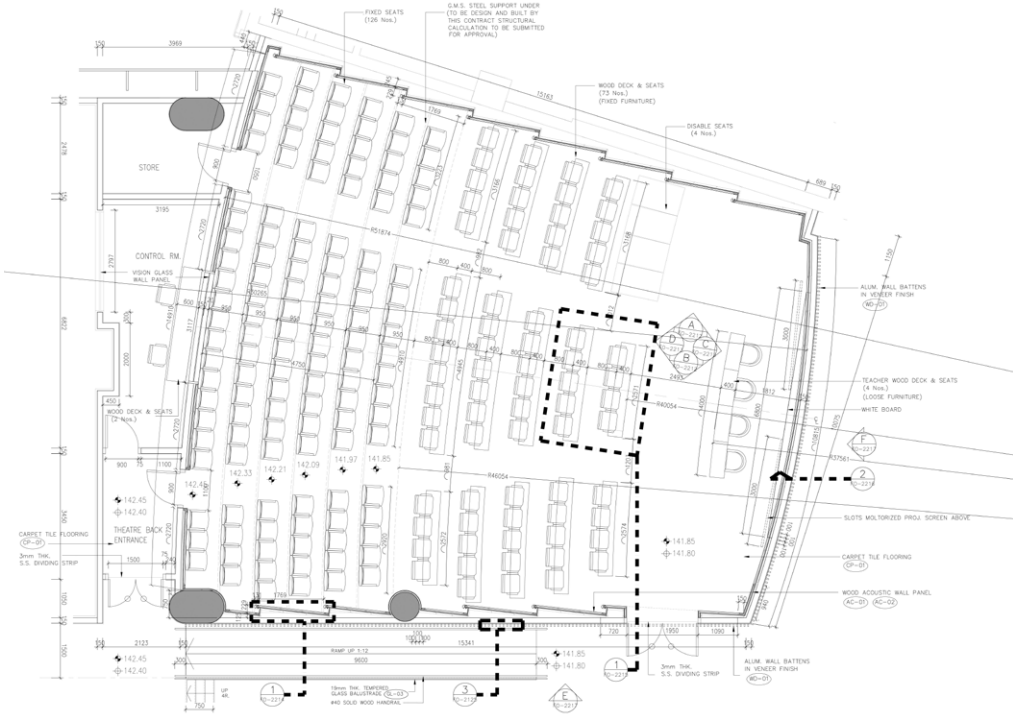
Responsibilities:
-Coordinated and updated Revit model according to latest architectural and structural drawings.
-Produced detailed drawings in Revit for building permit resubmission.
-Coordinated with the interior designer to produce interior design tender package.
-Recalculated and checked occupancy and fire escape distance.

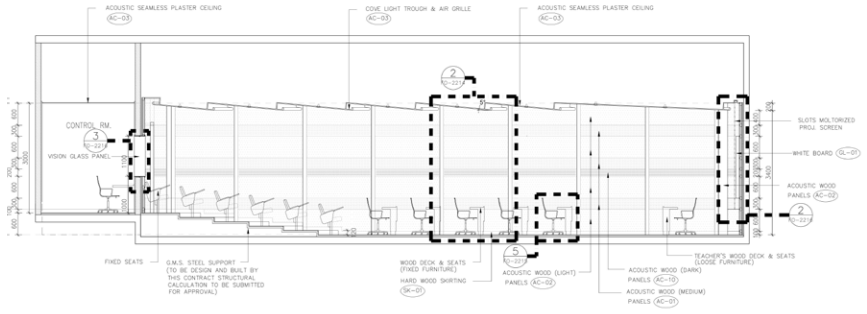
Top: Exterior view of the project.
Right: Submission drawings produced in Revit.

Interior Design Tender Package

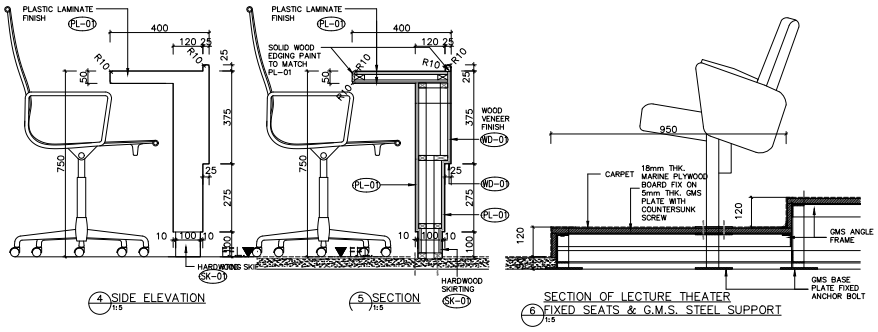
LEGEND 1:

1. STC55 160mm 4–LAYER GYPSUM WALL BOARD ACOUSTIC INSULATION
2. STC50 145mm 3–LAYER GYPSUM WALL BOARD ACOUSTIC INSULATION
3. STC45 105mm 2–LAYER GYPSUM WALL BOARD ACOUSTIC INSULATION
4. STC49 LAMINATED DOUBLE GLAZED PARTITION
5. STC45 DOUBLE GLAZED GLAZED PARTITION
6. FURRED DRYWALL


STORE
CONTROL RM.
THEATRE BACK ENTRANCE
WOOD DECK & SEATS (73 Nos.) (FIXED FURNITURE)
DISABLE SEATS (4 Nos.)
TEACHER WOOD DECK & SEATS (4 Nos.) (LOOSE FURNITURE)
WHITE BOARD
SLOTS MOTORIZED PROJ. SCREEN ABOVE
CARPET TILE FLOORING
WOOD ACOUSTIC WALL PANEL



ELEVATION – A

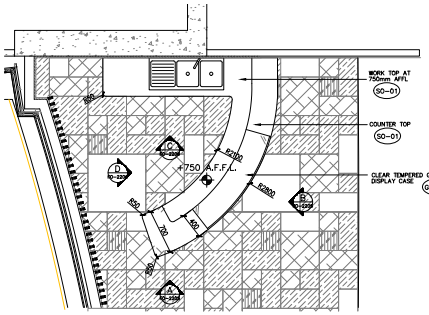

PLASTIC LAMINATE FINISH
SOLID WOOD EDGING PAINT TO MATCH PL-01
WOOD VENEER FINISH
HARDWOOD SKIRTING
950
CARPET
18mm THK. MARINE PLYWOOD BOARD FIX ON 5mm THK. GMS PLATE WITH COUNTERSUNK SCREW
GMS ANGLE FRAME
GMS BASE PLATE FIXED ANCHOR BOLT

4 SIDE ELEVATION 1:5

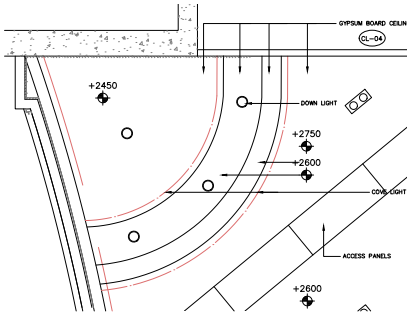
5 SECTION 1:5

SECTION OF LECTURE THEATER
6 FIXED SEATS & G.M.S. STEEL SUPPORT 1:5

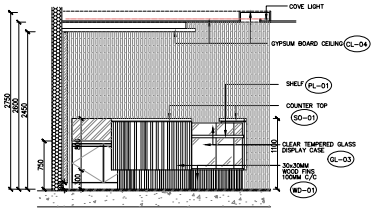
I coordinated with interior designer and produced working drawings to convey design intent. The interior design tender package comprised over a hundred tender drawings.
(Interior wall location plan, interior finishes plan, reflected ceiling plan, door schedule, interior glazing plan and schedule, movable partition detail plan, interior elevation etc.)



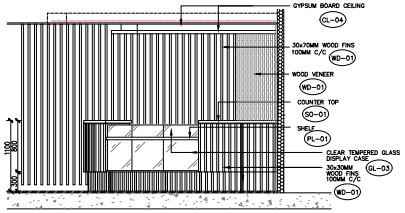
1 6/F COFFEE CORNER DETAIL PLAN
1:20 (A1)/1:40 (A3)



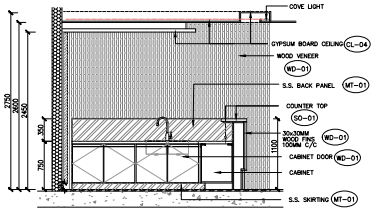
2 6/F COFFEE CORNER REFLECTED CEILING PLAN
1:20 (A1)/1:40 (A3)



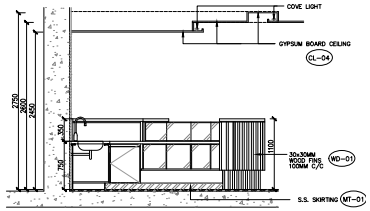
A REAR ELEVATION
1:20 (A1)/1:40 (A3)



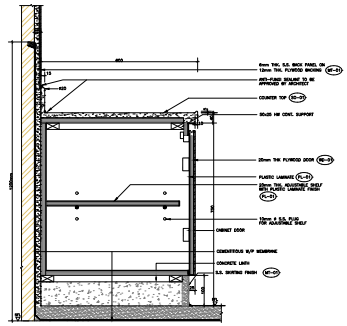
B FRONT ELEVATION
1:20 (A1)/1:40 (A3)



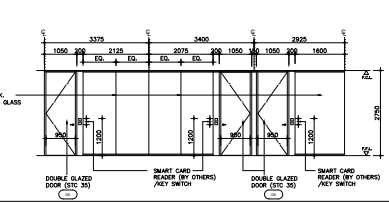
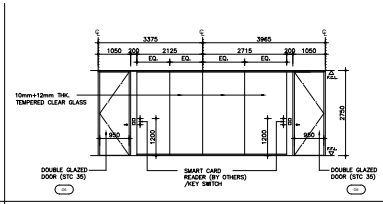
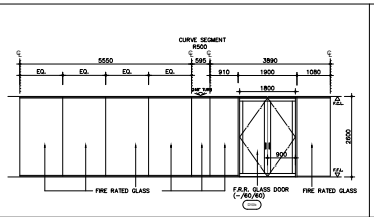
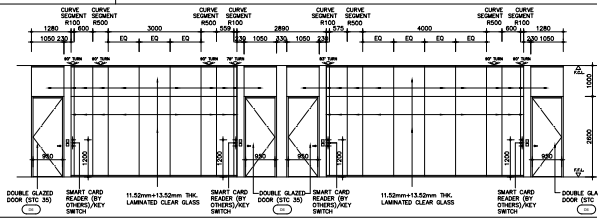
C 6/F COFFEE CORNER SECTION
1:20 (A1)/1:40 (A3)

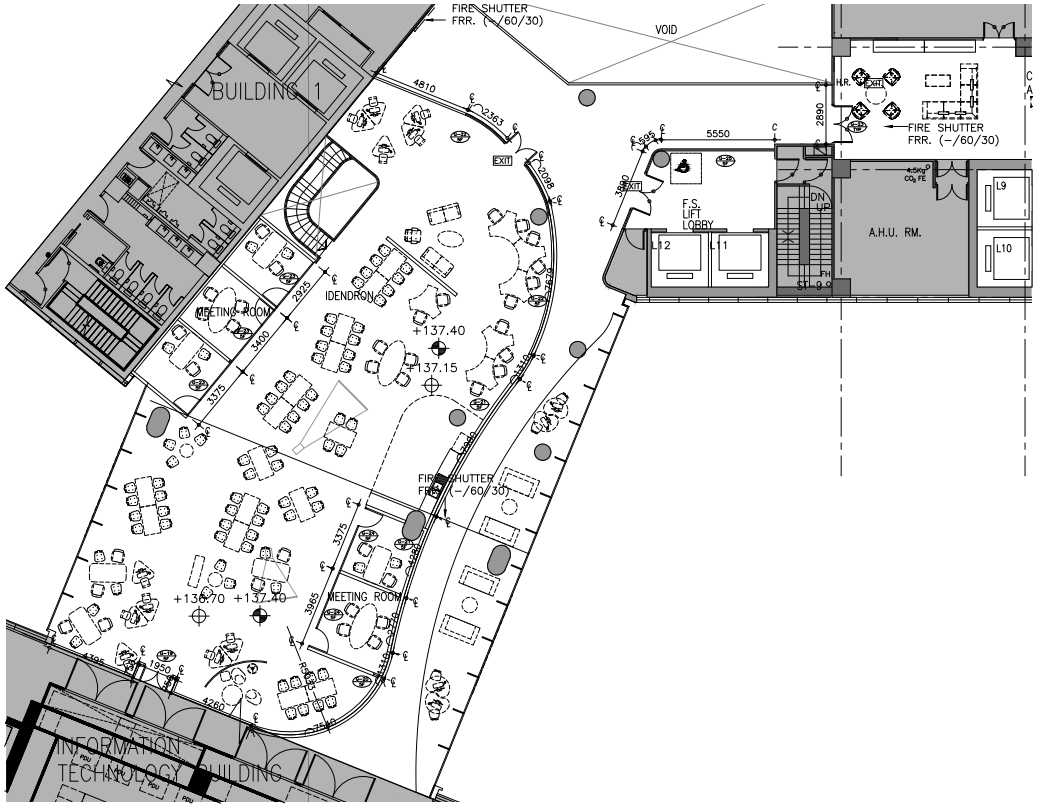


D 6/F COFFEE CORNER SECTION
1:20 (A1)/1:40 (A3)



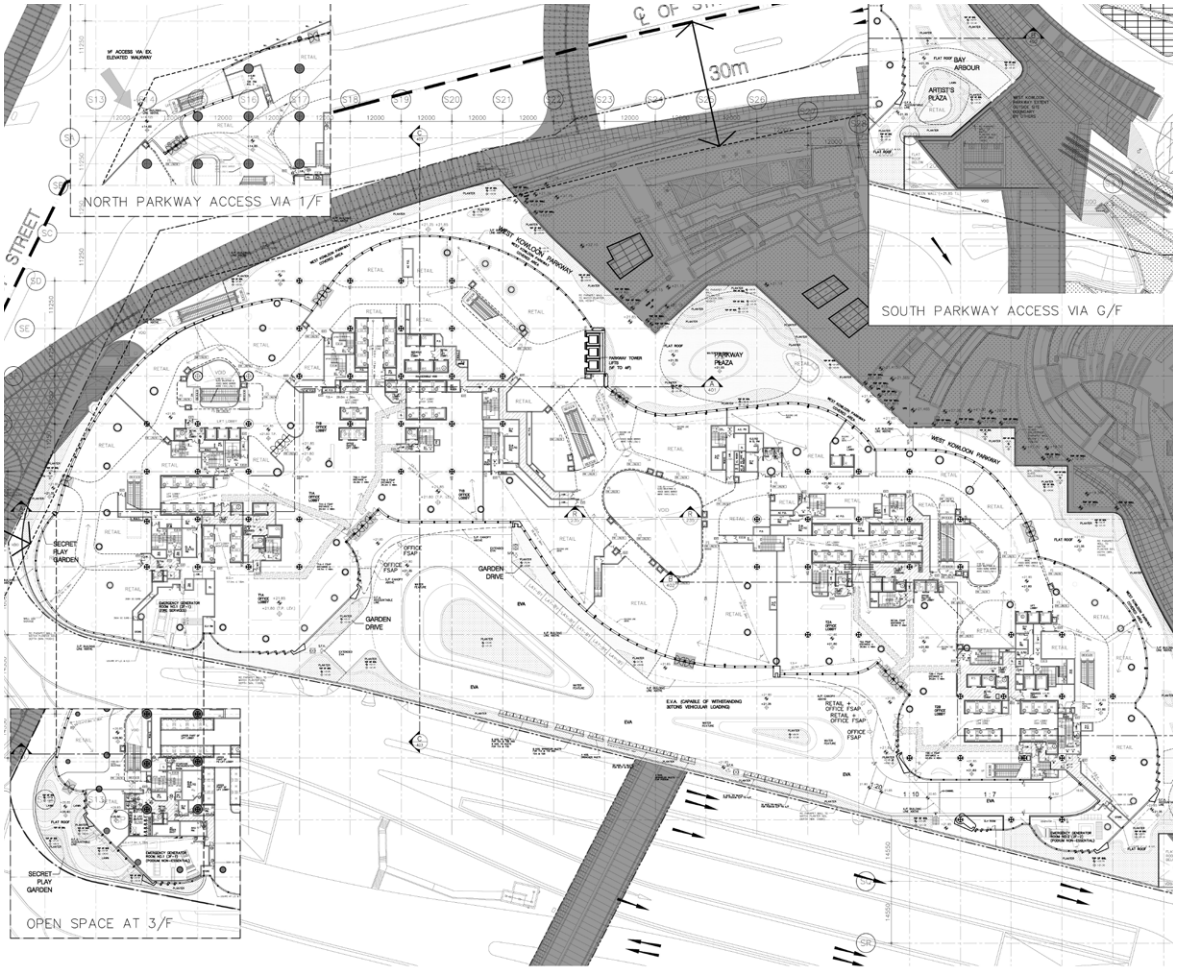
E COFFEE CORNER CABINET DETAIL
1:5 (A1)/1:10 (A3)

ELEVATION		
LOCATION	MEETING ROOM AT 5/F TECH-LANDMARK 1	MEETING ROOM AT 5/F TECH-LANDMARK 1
WINDOW MARK		
SECTION & FINISH	ALUMINUM (POWDER COATED)	ALUMINUM (POWDER COATED)
GLAZING	* CLEAR TEMPERED GLASS FOR FIXED PANEL	* CLEAR TEMPERED GLASS FOR FIXED PANEL
REMARKS	STC 45	STC 45
ELEVATION		
LOCATION	F.S. LIFT LOBBY 5/F TECH-LANDMARK 1	CLASSROOM AT G/F TECH-LANDMARK 1
WINDOW MARK		
SECTION & FINISH	ALUMINUM (POWDER COATED)	ALUMINUM (POWDER COATED)



West Kowloon Station Topside Development

Wong & Ouyang (HK) Ltd.



Location: Hong Kong
Project Size: 294,000 m^2
Status: Under Construction

Involved Phase: Design Development

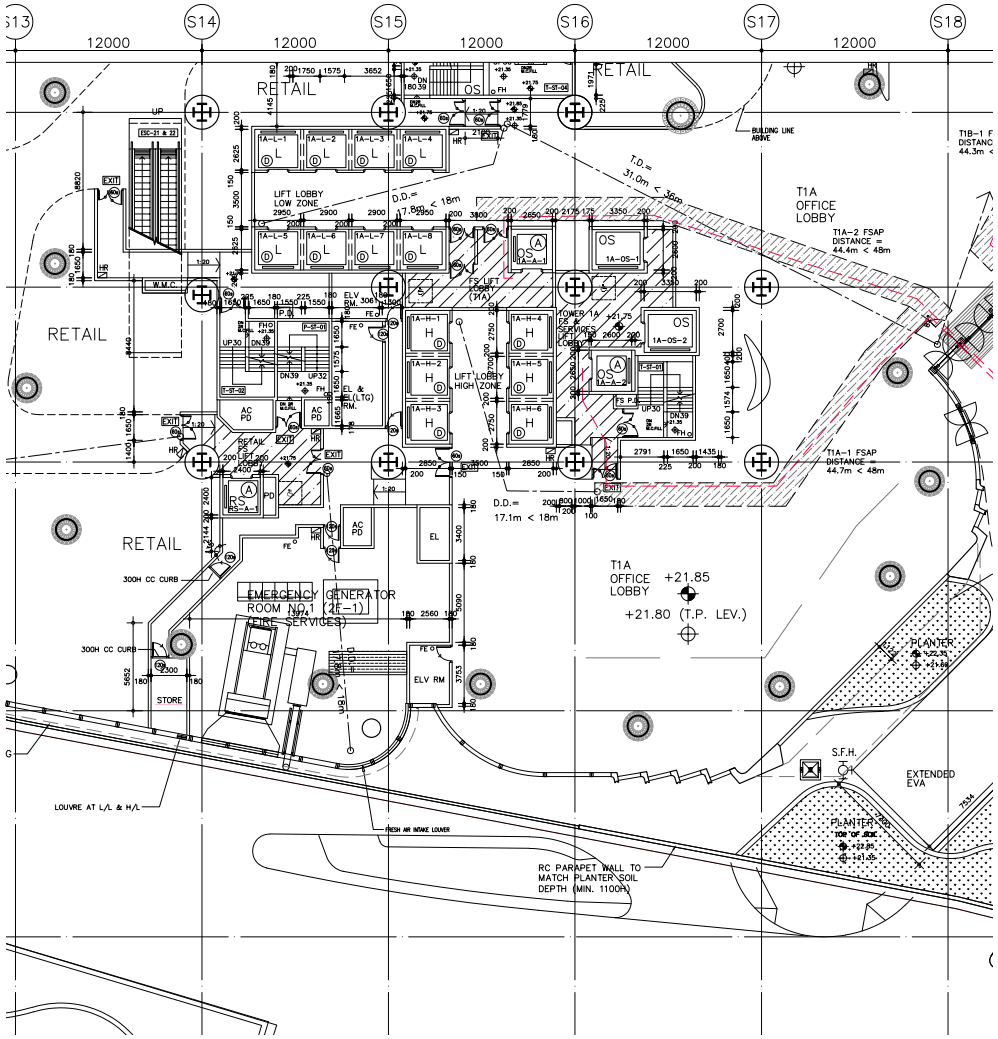
Working Environment: AutoCAD

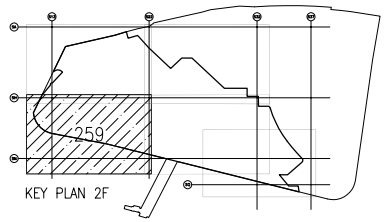
Responsibilities:

-Coordinated with consultants and developed detailed architectural drawings.
-Produced plans, sections and elevations for government submission.
-Researched building codes and assessed project plans to ensure full regulatory compliance.

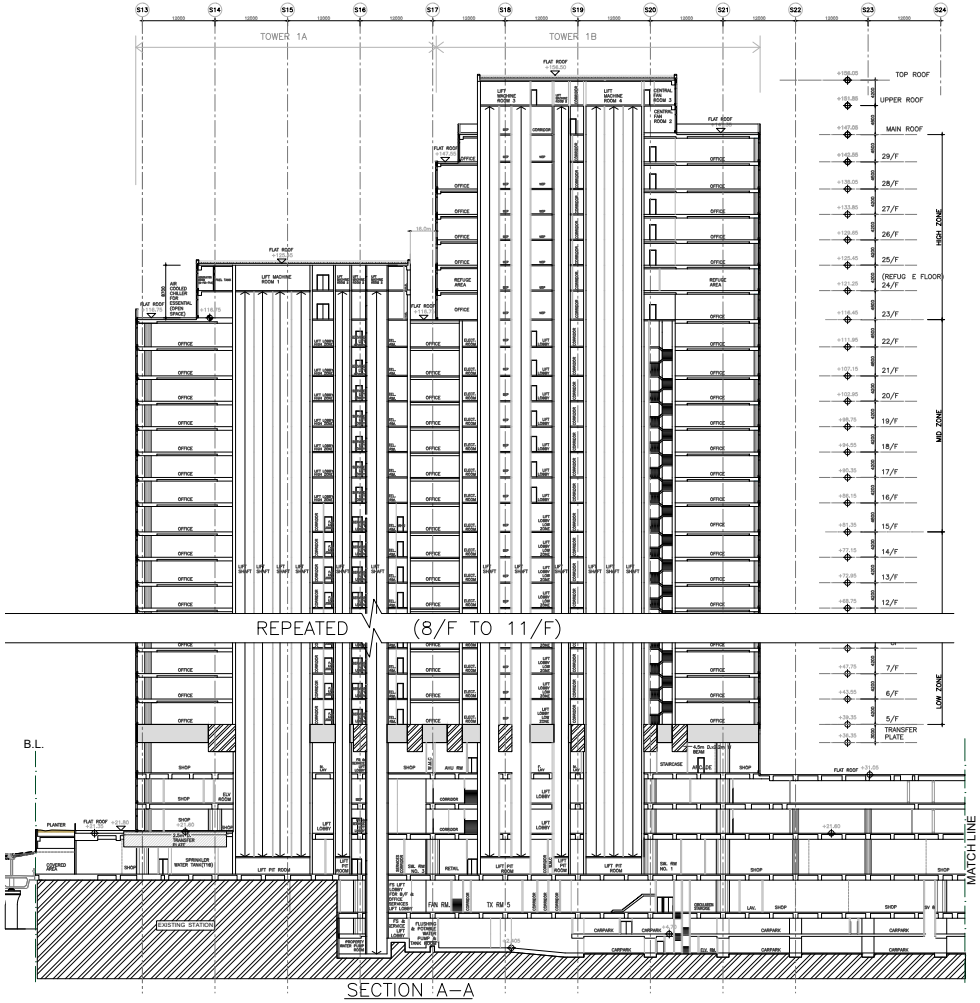
Left: Rendering of the project
Right: Second floor overall plan

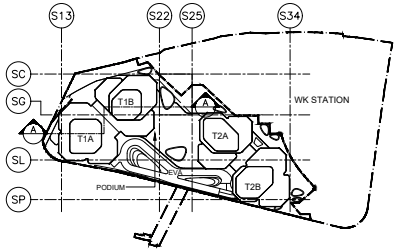
Second Floor Zoom-in Plan





Tower 1A, 1B Schematic Section





Flatiron by Meridian

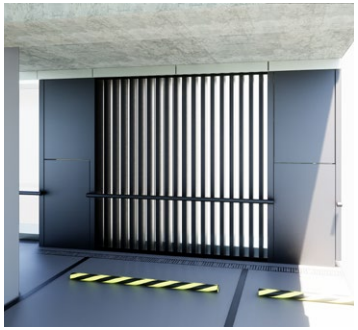
KLS Partnership (HK) Ltd.

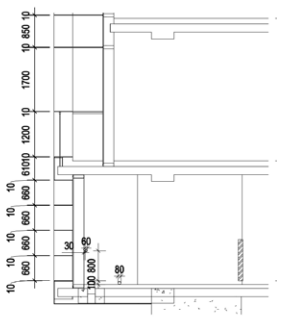
Location: Cambodia
Project Size: 82,100 m²
Status: Completed in 2021

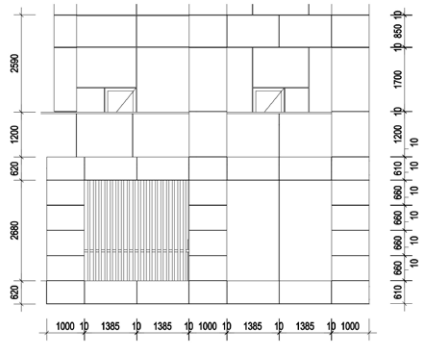
Involved Phase: Design Development

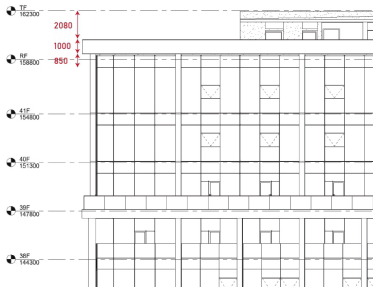
Working Environment: Revit, AutoCAD, Enscape, Illustrator, InDesign

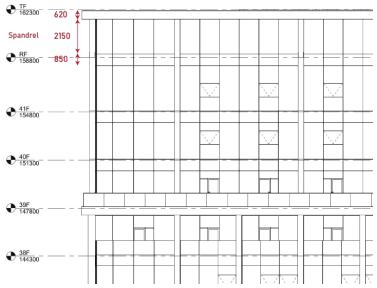
Responsibilities:
-Was in charge of the Revit model and implemented updates to reflect the latest design.
-Utilized Revit model in the selection of facade mockup extent and carried out facade studies.
-Prepared parking design package including renderings, color coding, and signage.

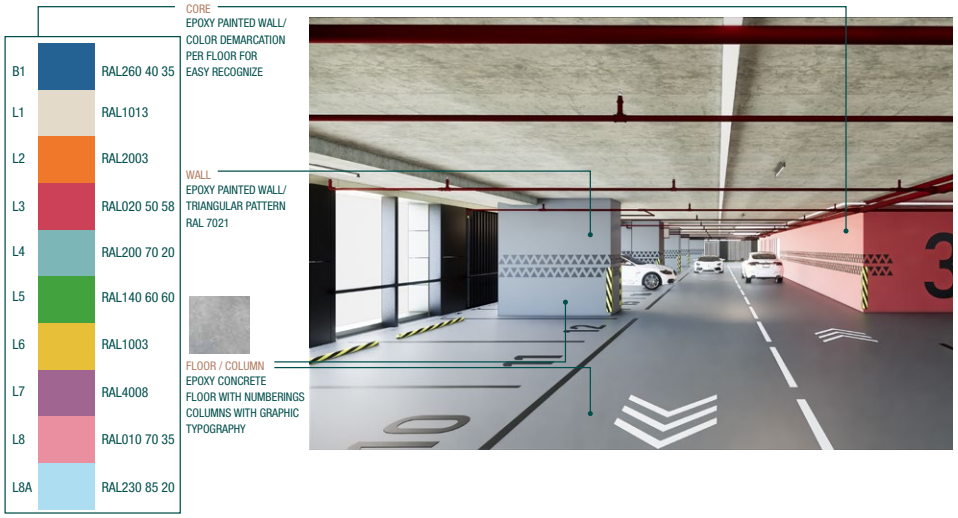


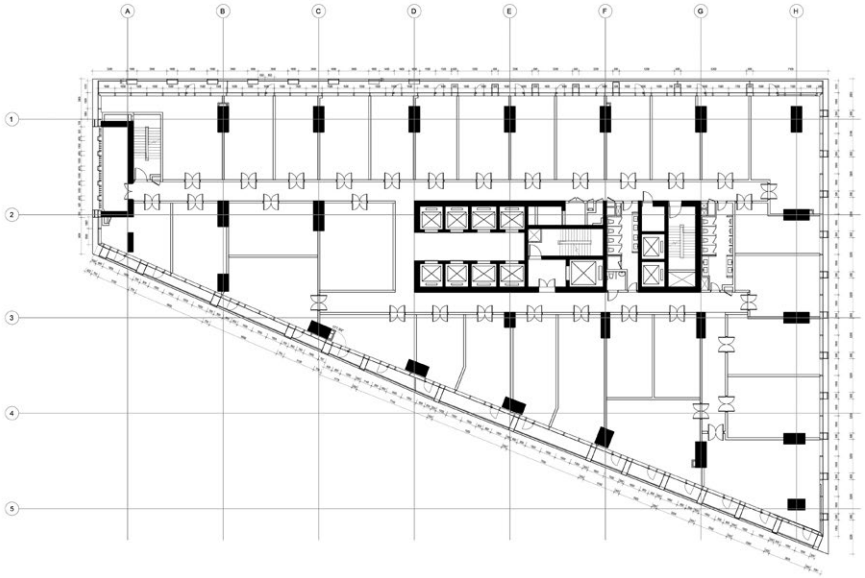




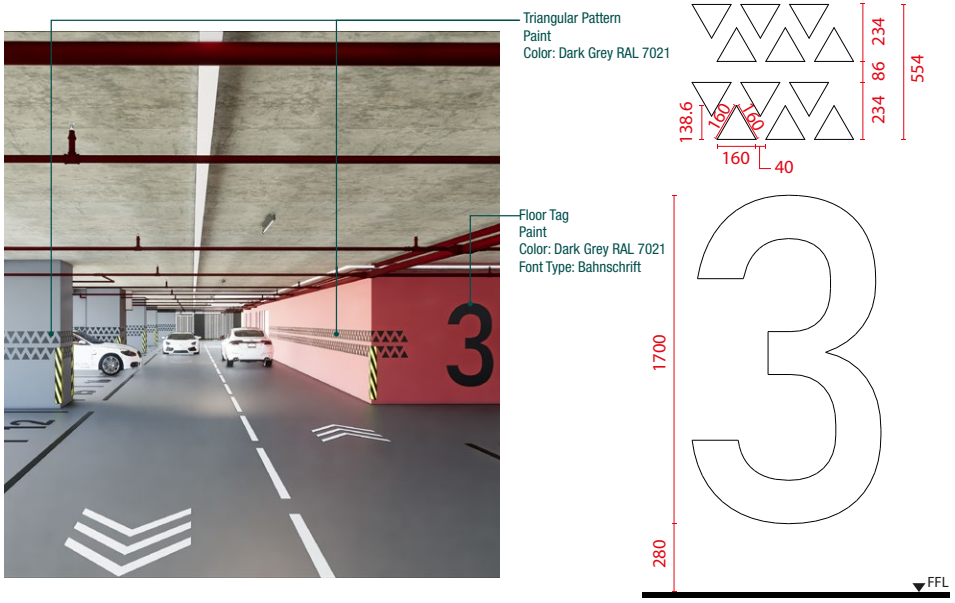


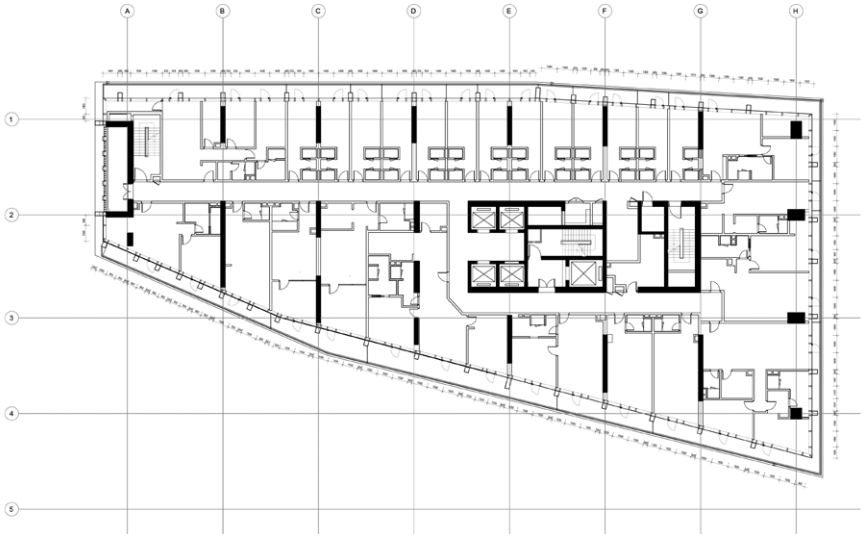






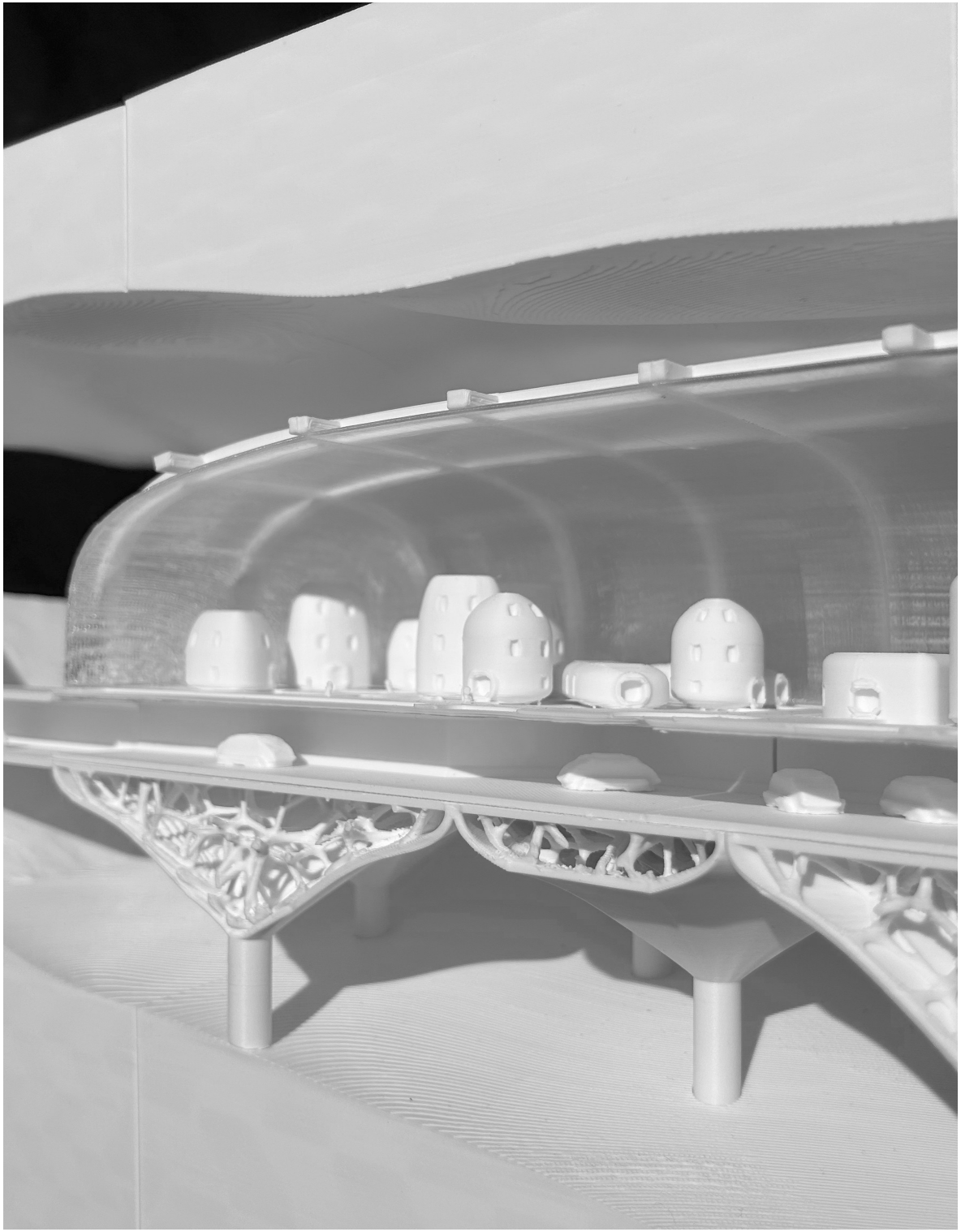
Typical Office Layout





Typical Hotel Room Layout

II Academic Projects



Lunar Lava Tube City

Subterranean Lunar Base Master Plan

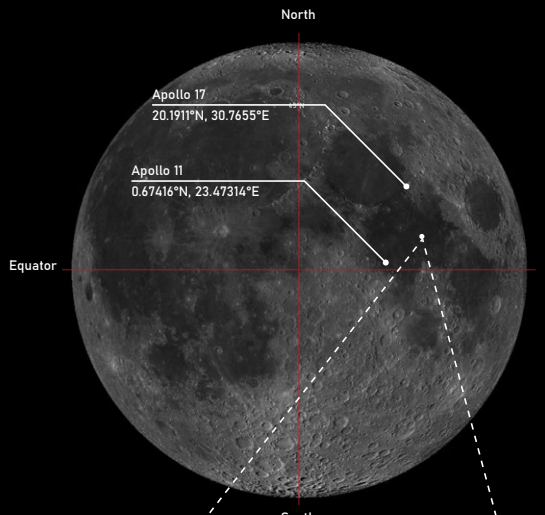
M.Arch Thesis
Location: The Moon
Working Environment: Revit, Rhinoceros, Grasshopper, Enscape, Blender, Illustrator, Photoshop

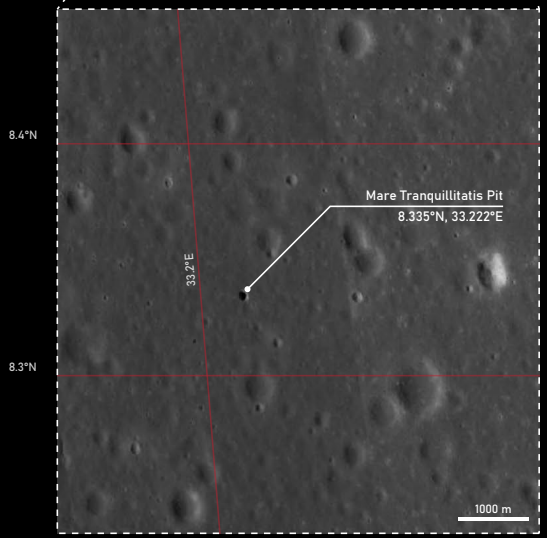
Humans faces a one in six chance of going extinct this century due to a variety of long-tail risks such as asteroids strikes, large-scale volcanic eruptions, pandemics and environmental degradation. To ensure the long-term continuation of our species, we must be prepared for the possibility of living beyond Earth and learn how to build our second home in space.

As the closest celestial body to the Earth, the Moon serves as an ideal testing ground for advancing space technology and gaining the knowledge required to establish extraterrestrial settlements. However, creating permanent settlements on the moon is a formidable challenge due to its hostile environment.

This project envisions a lunar city sited inside a lava tube, a subterranean structure formed by ancient volcanic activity and provides favorable environment conditions for establishing permanent lunar habitat. The development of the Lunar Lava Tube City would happen in phases: the initial phase would allow crews to investigate, conduct research, and continue building the settlement. Gradually, additional equipment would arrive to support manufacturing, resource extraction, and construction. Eventually, the project would grow into a thriving city: a permanent lunar base for science, exploration, even tourism.

Site

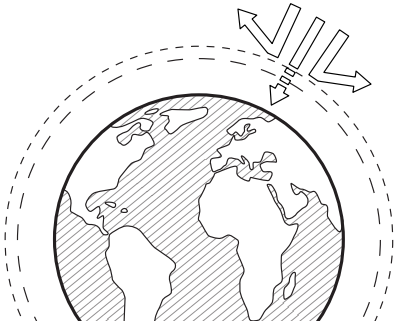




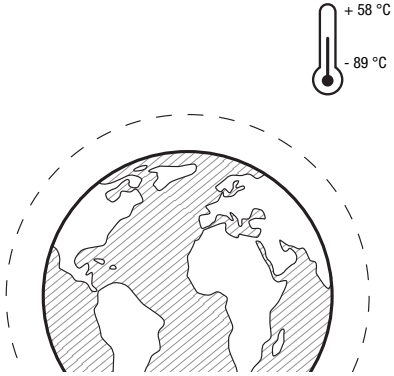
Benefit of Lava Tube

Earth

Atmosphere will burn and slow down meteorites.

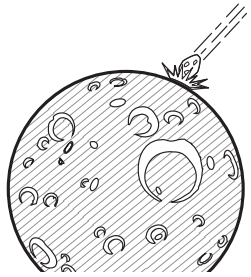


Atmosphere and Magnetosphere shielded most cosmic radiation.

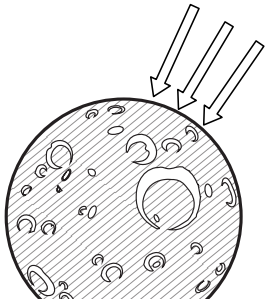


Atmosphere keeps relatively habitable temperature on Earth.

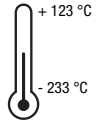
Moon



Meteorites impact the moon with full velocity due to thin atmosphere on the moon.

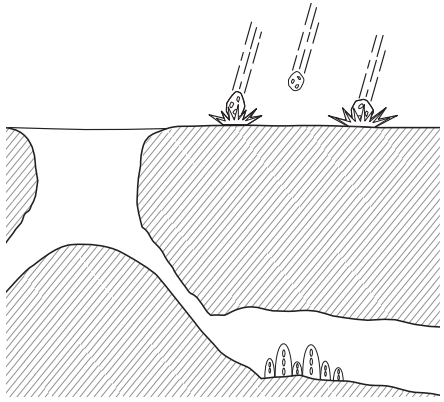


Cosmic radiation reach moon surface directly.

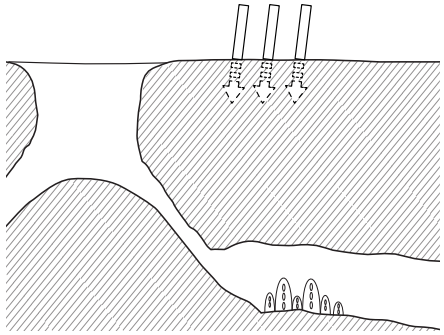


Long lunar day and thin atmosphere leads to huge temperature difference.

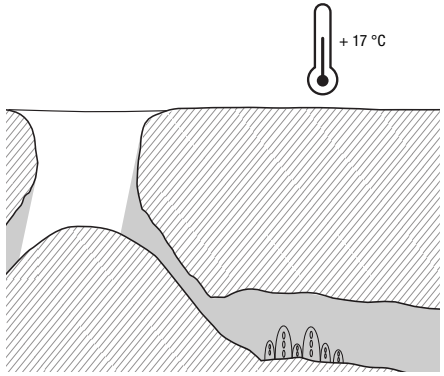
Lava Tube



Thick regolith roof provide natural protection from meteorites.

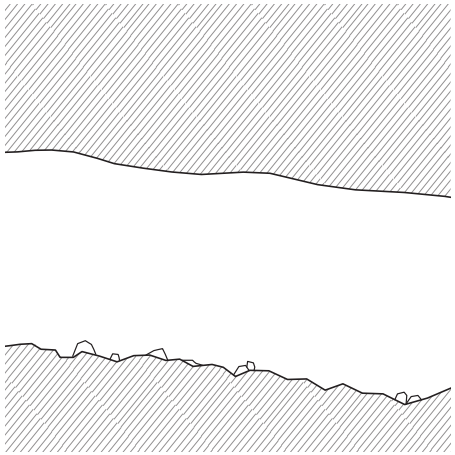


Regolith roof shield against cosmic radiation.

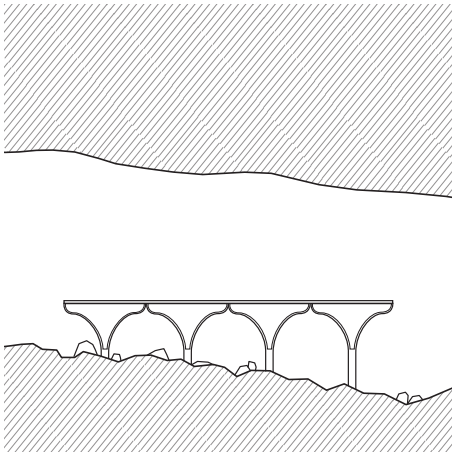


Shaded locations maintains comfortable temperature varying by less than 1°C over an entire lunar day.

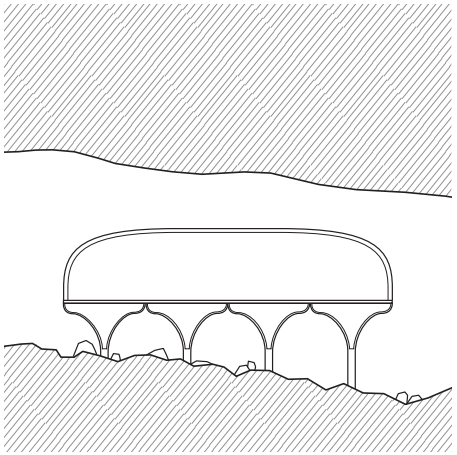
Concept Diagram



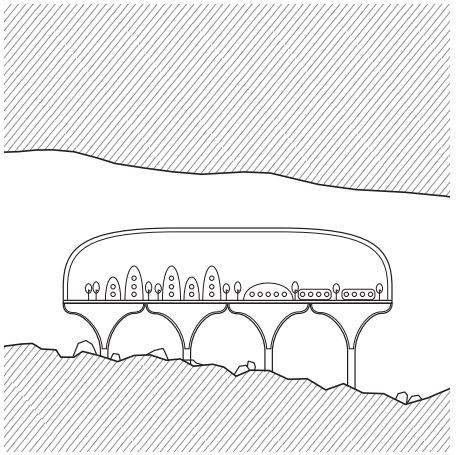
CONTEXT
Referencing terrestrial lava tube example, the floor of lunar lava tube is expected to be uneven and full of debris.



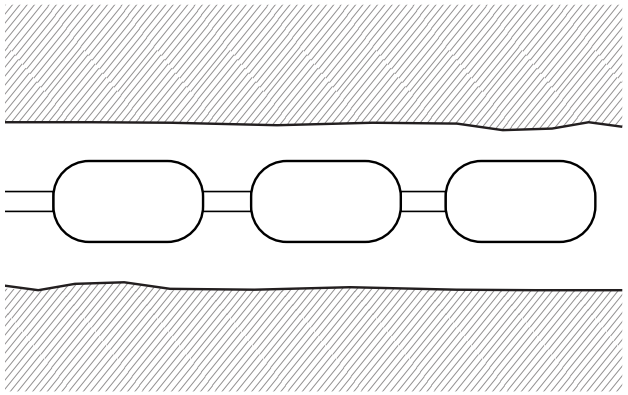
PLATFORM
Elevated platform create new ground for construction of the habitat.



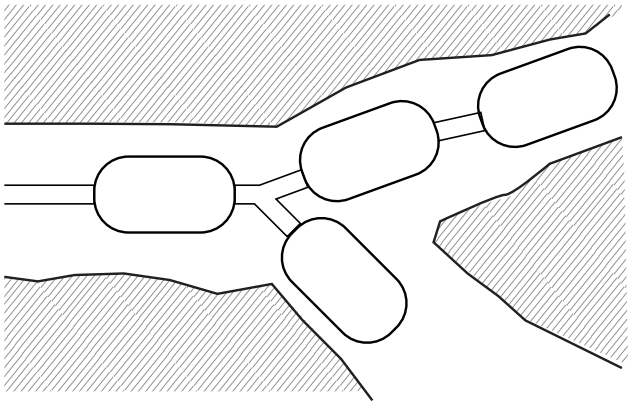
PRESSURIZED VESSEL
Create a protected and large volume space for the habitat.



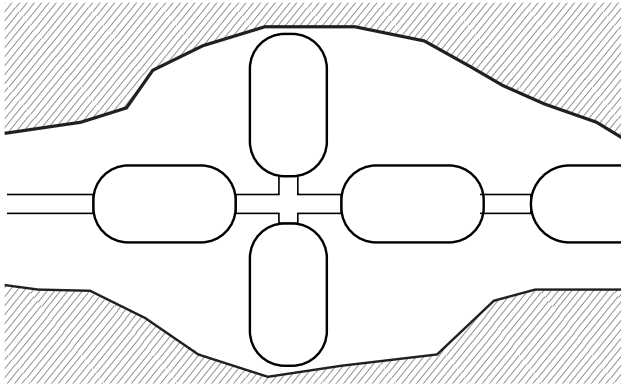
UNDERGROUND CITY
The habitat modules will be 3D printed using regolith in various shape according to different functions.



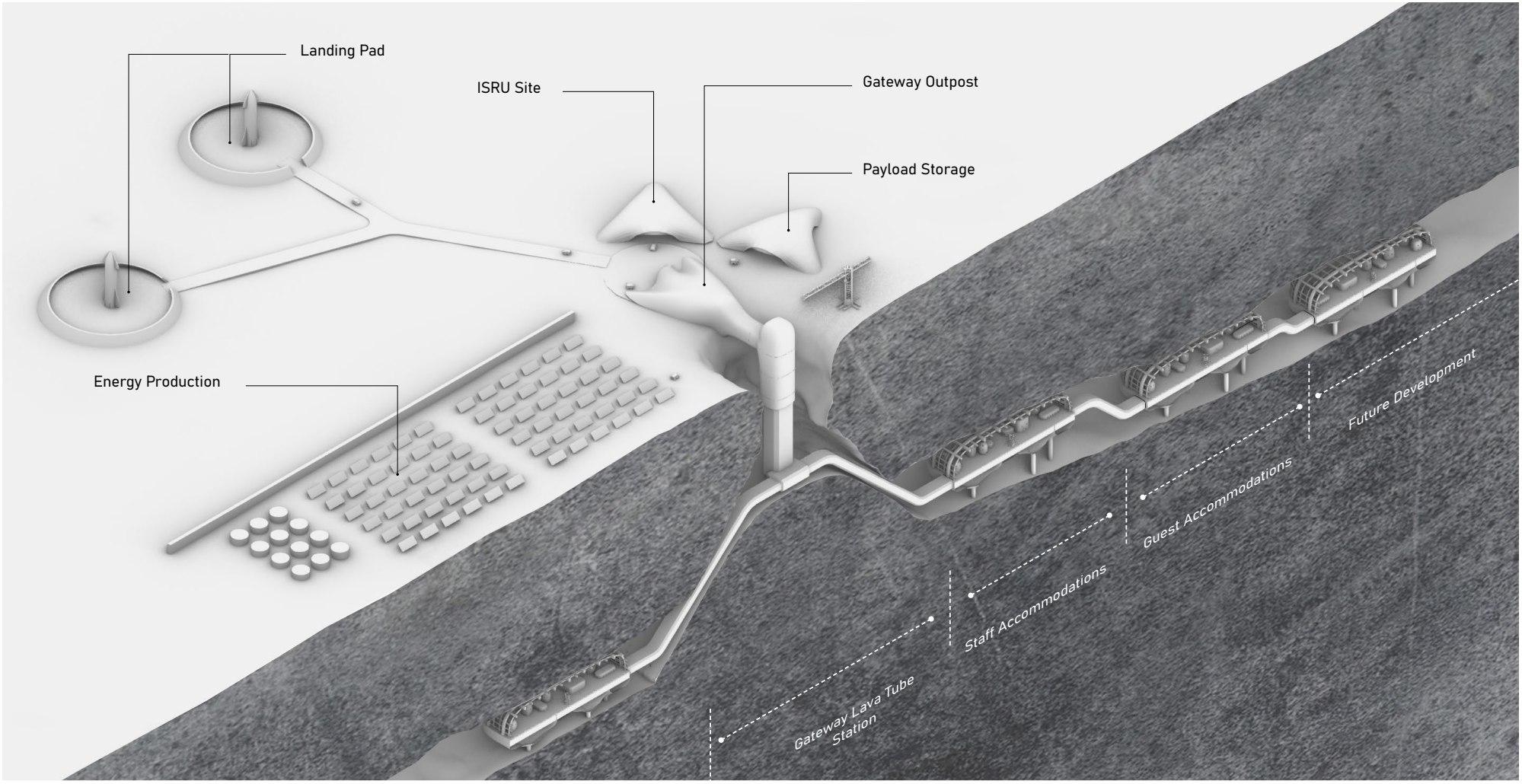
Scenario: Linear

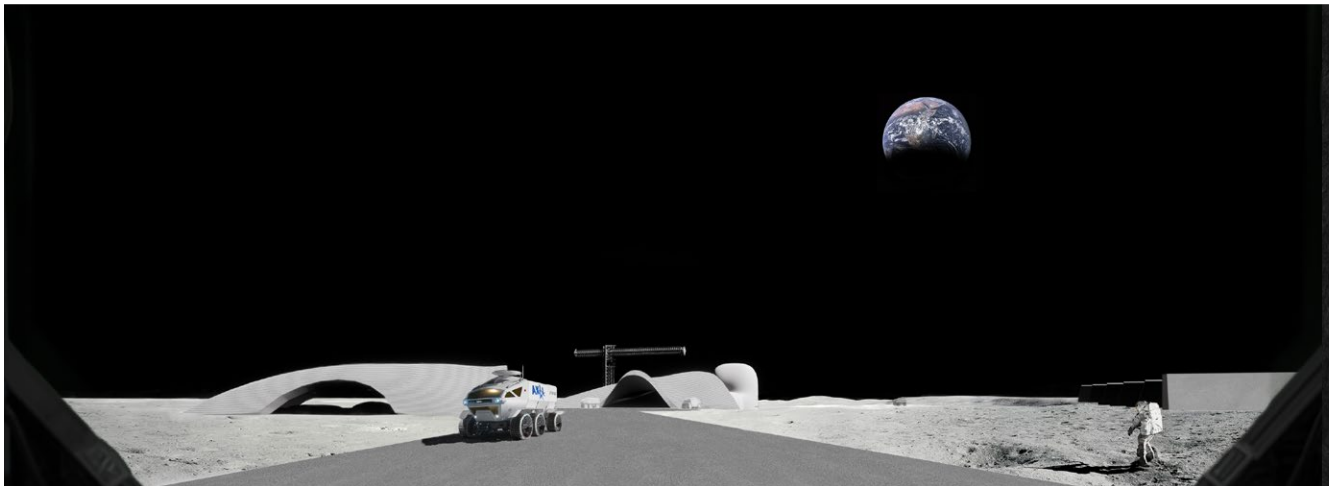


Scenario: Branch

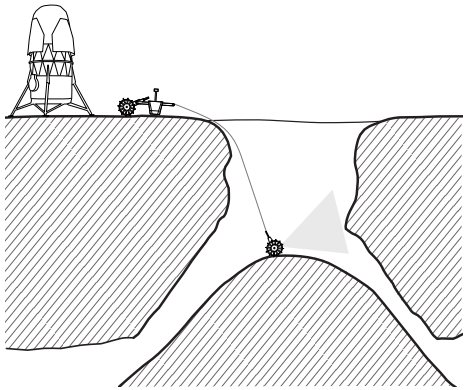


Scenario: Hall

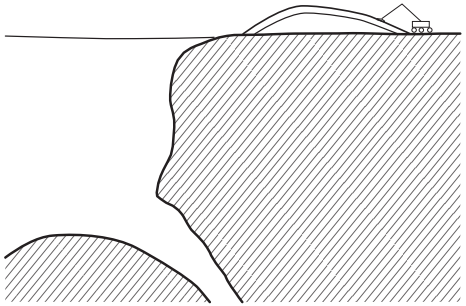

Landing Pad
ISRU Site
Gateway Outpost
Payload Storage
Energy Production
Gateway Lava Tube Station
Staff Accommodations
Guest Accommodations
Future Development



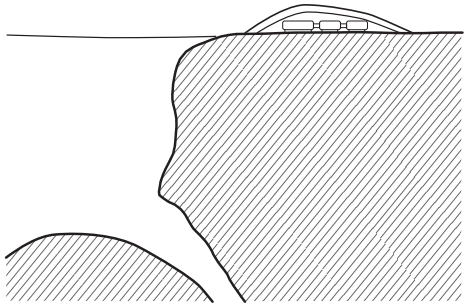
Development Sequence



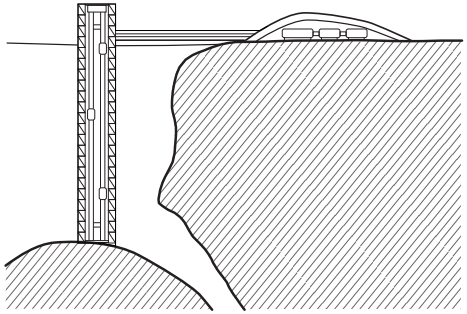
Year 1
First lander arrive with axel rover scanning the lava tube.



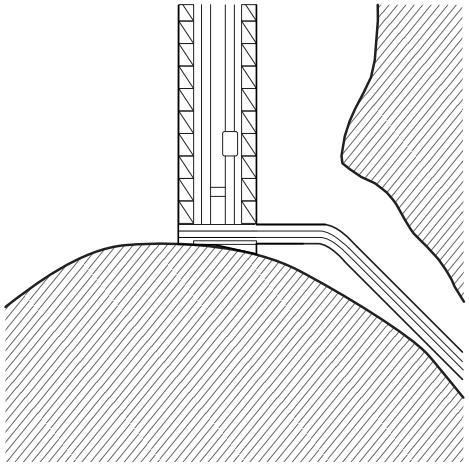
Year 3
3D print regolith shield for surface gateway outpost.



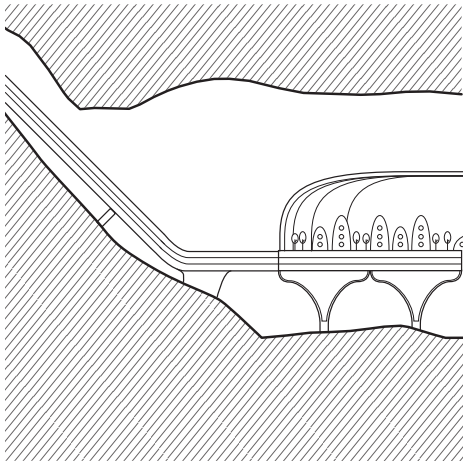
Year 5
Establish surface gateway outpost.



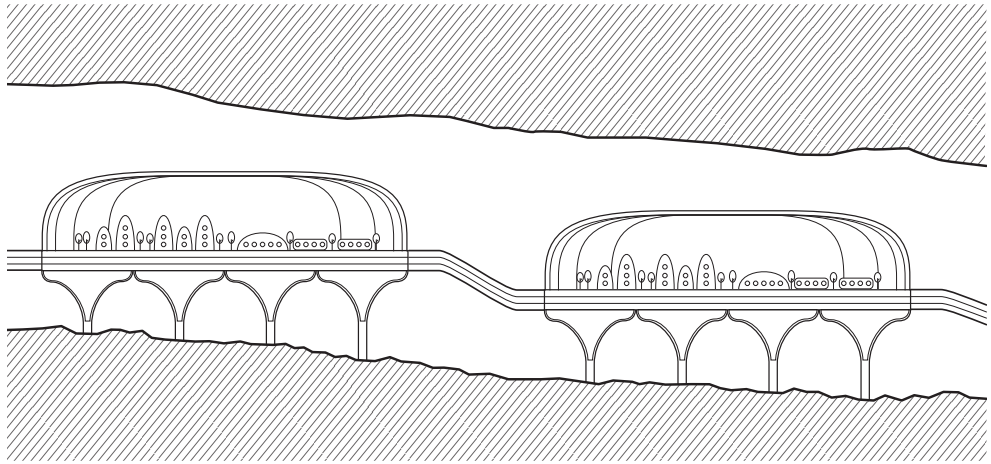
Year 10
Construct the elevator tower.



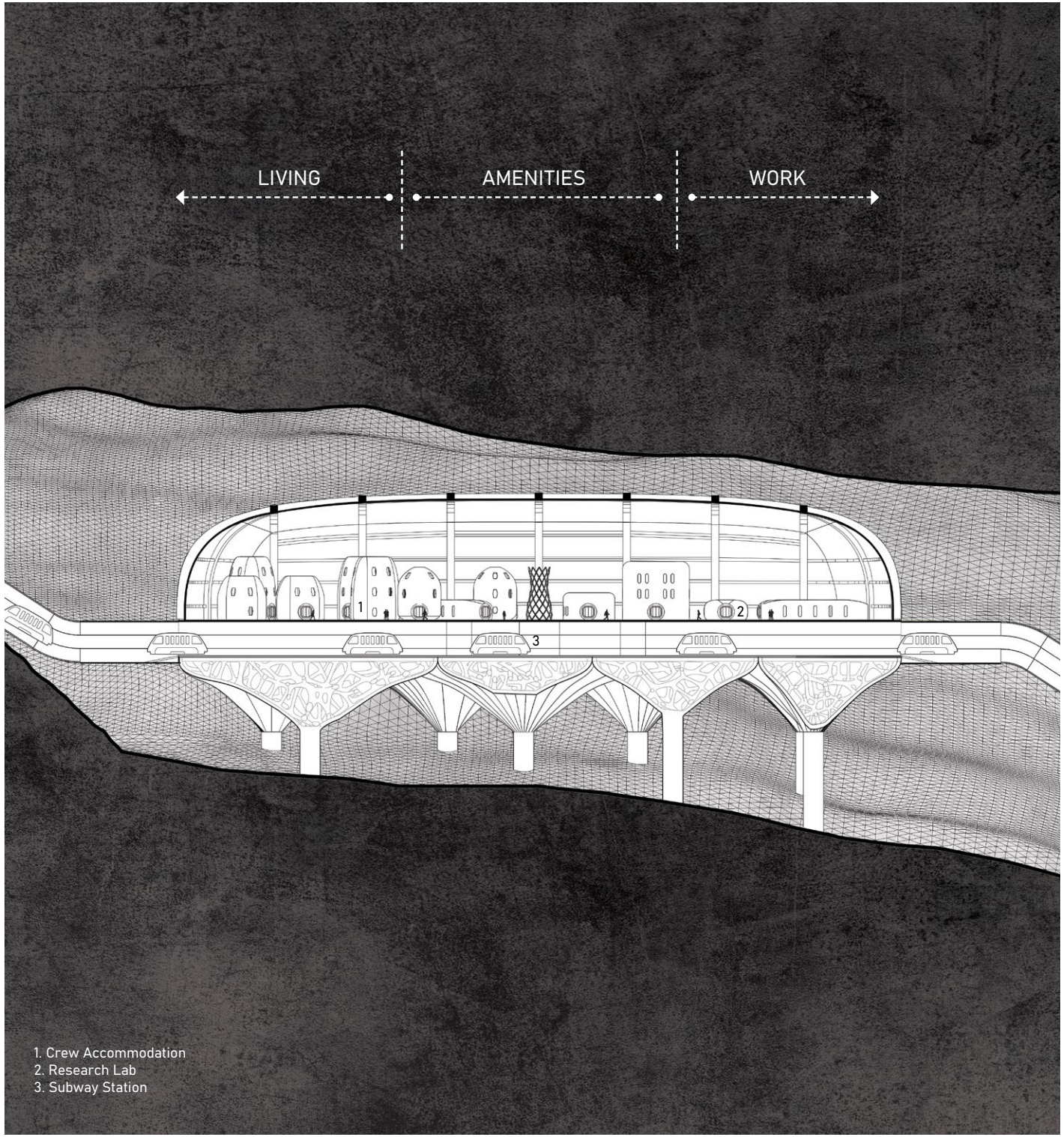
Year 15
Construct underground transport infrastructure.



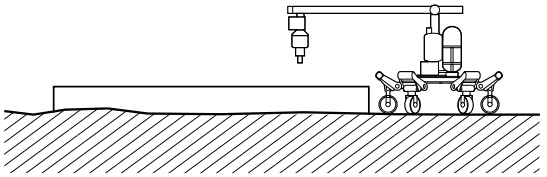
Year 20
Construct the first lava tube base.



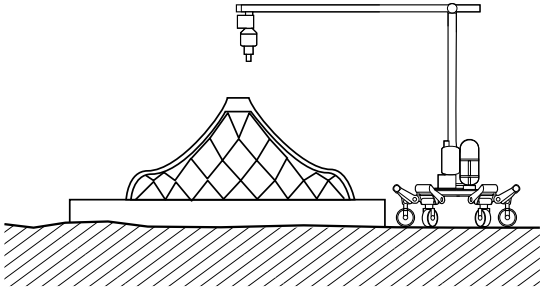
Year 50
Joining multiple base and become a lava tube city.



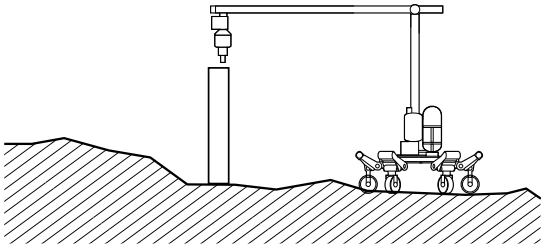
1. Crew Accommodation
2. Research Lab
3. Subway Station



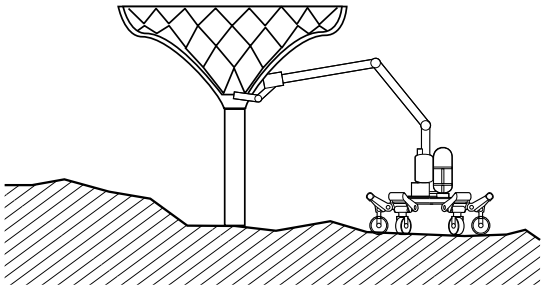
Create flat construction site.



The platform base will be 3D printed using lunarcrete. Lattice structure is incorporated to reduce material and weight while provides strength.



3D printing the column on site.



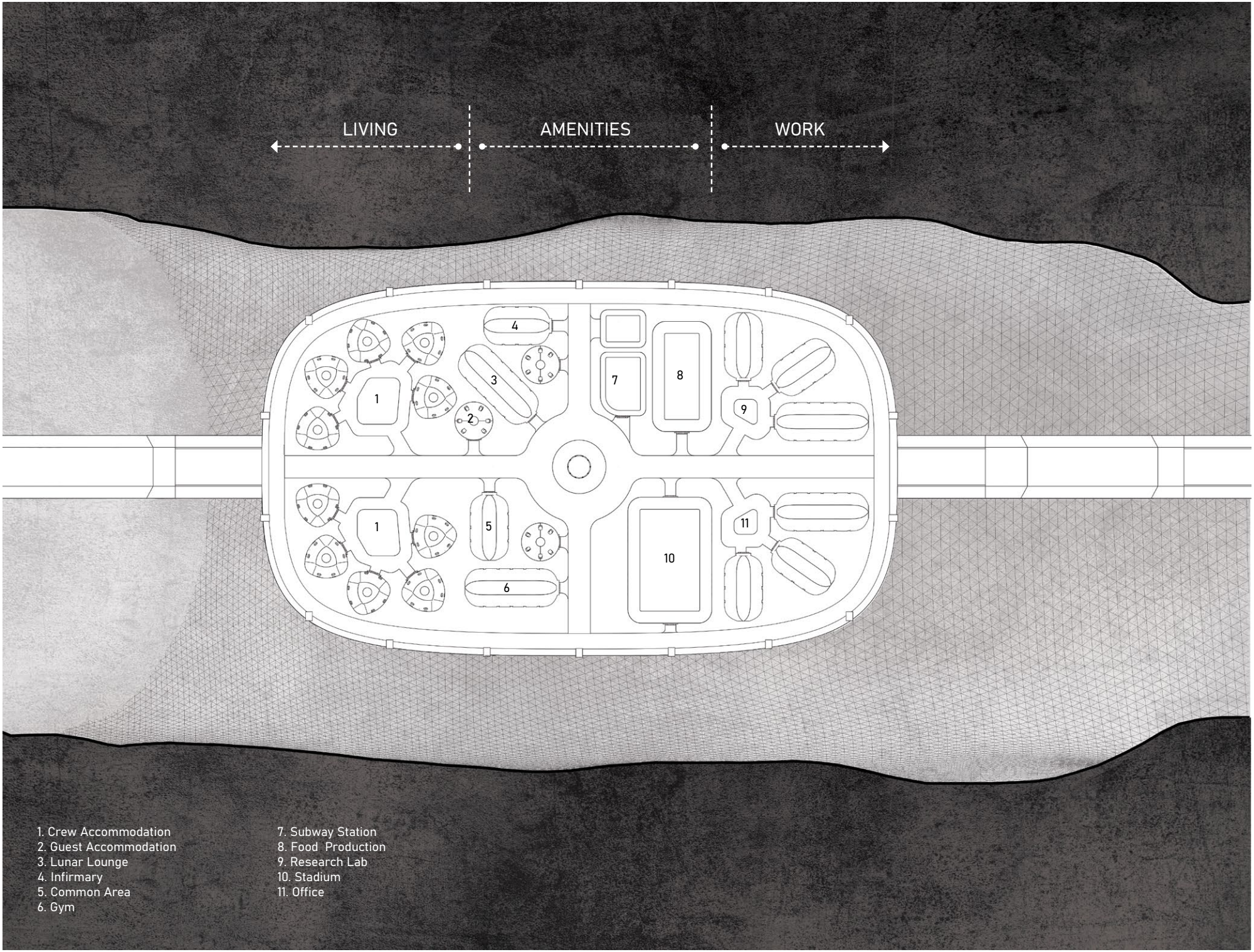
The light weight property of lattice structure allows the platform to be lifted and installed on the column printed on site.

Circadian Lighting Screen

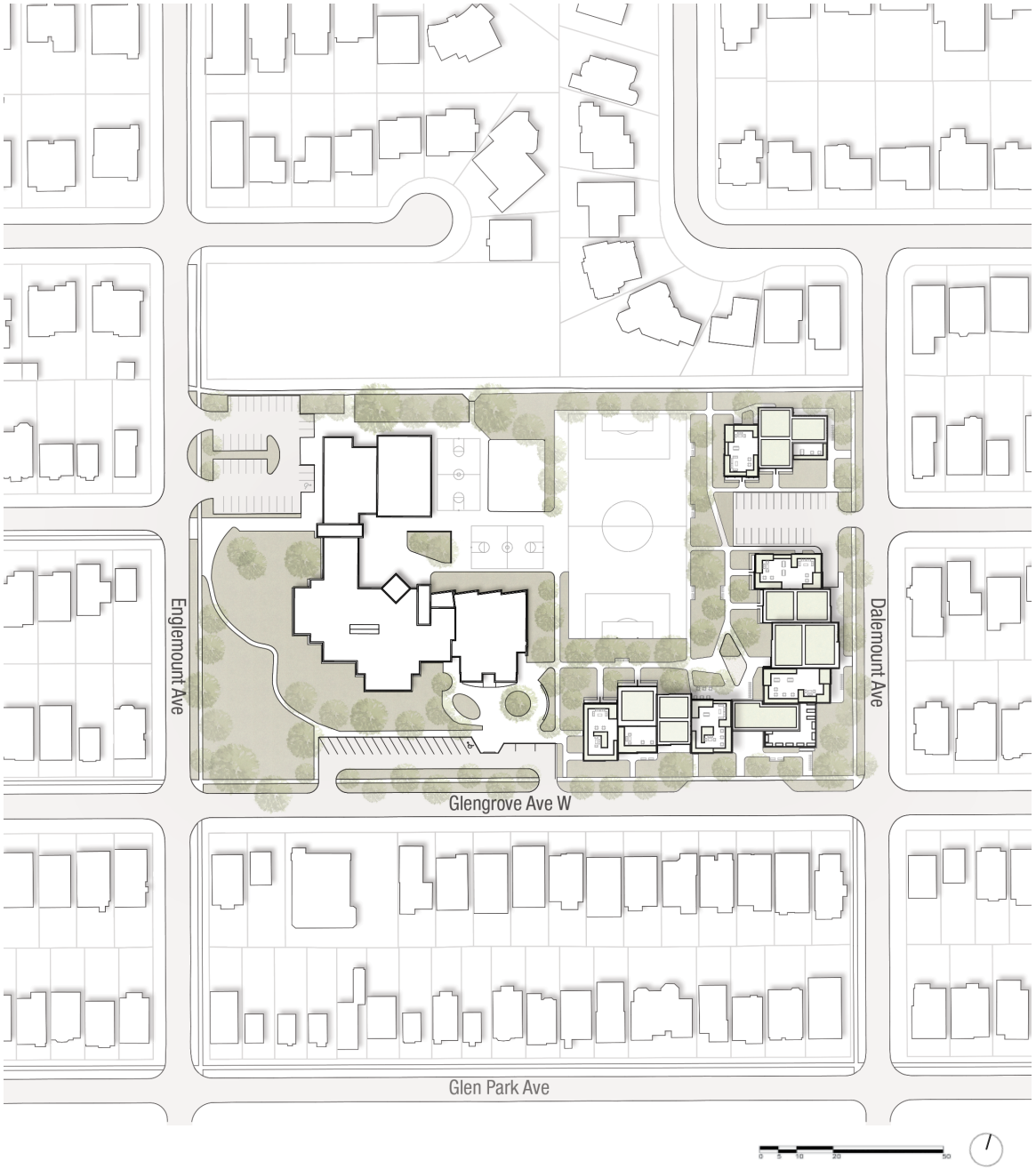
- Sky simulation screen that replicates Earth's day and night cycles using circadian lighting, aligned with Earth time, to support the well-being of staff and guests.

Lunar Garden

- Diverse plant species preserved from Earth.
- Provides aesthetic beauty and contributes to the mental well-being of inhabitants.
- Improves air quality by adding freshness and enriching the environment with oxygen.



1. Crew Accommodation
2. Guest Accommodation
3. Lunar Lounge
4. Infirmary
5. Common Area
6. Gym
7. Subway Station
8. Food Production
9. Research Lab
10. Stadium
11. Office



The Seamless Shift

Envisioning Affordable Housing

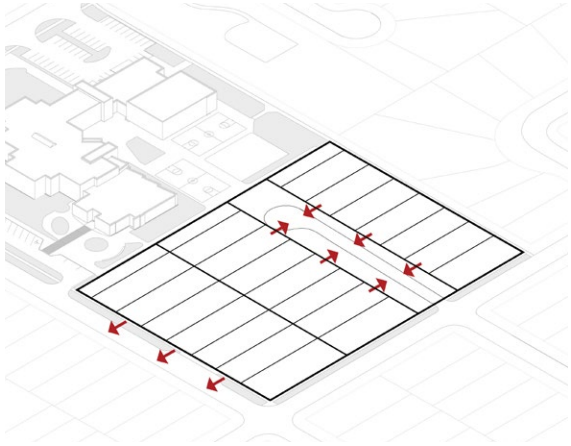
M.Arch Studio
Location: Toronto
Collaborator: Erela Chan
Working Environment: Revit, AutoCAD, Enscape, Illustrator, Photoshop

Located at the heart of the Glen park neighbourhood, this mass timber housing project will bring 250 new affordable rental units to Toronto. The main challenge of the project lies in its ability to initiate a smooth transition from single family homes to a 10-storey multi-unit residential project on the underutilized Toronto District School Board land. The building form is staggered to respond to the existing site fabric and the facade engages dialogue with its surroundings.

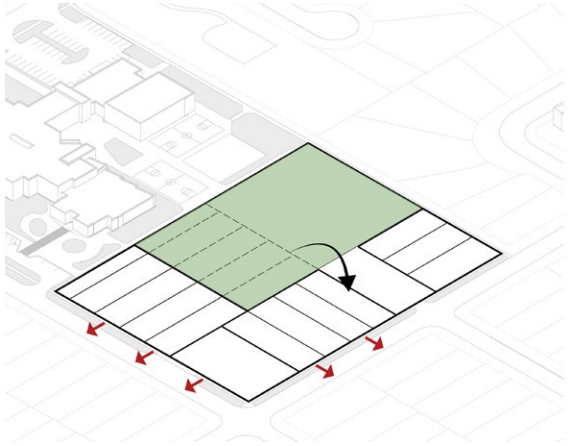
This project is conceived as a shared living room for the surrounding neighborhood. The community center at the ground level provides gathering spaces where the community can meet and organize various event. Meanwhile, voids are carved out at upper level on each residential block, aggregating conventional private balconies into a larger shared living space where residents can gather and celebrate.

Community Centre
- A place where the neighborhood could gather
- Multi-purpose hall that could hold varoius events
- Community Kitchen
- Playroom

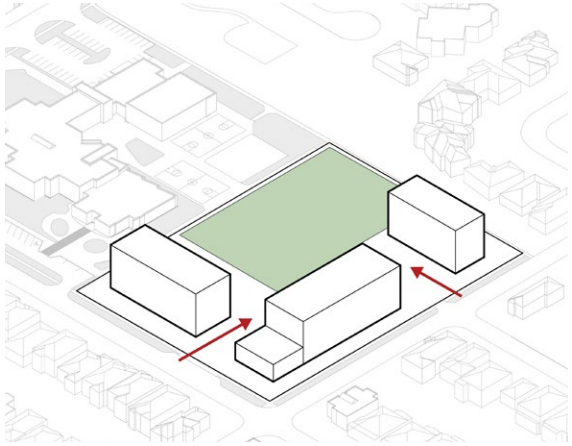
Design Strategy



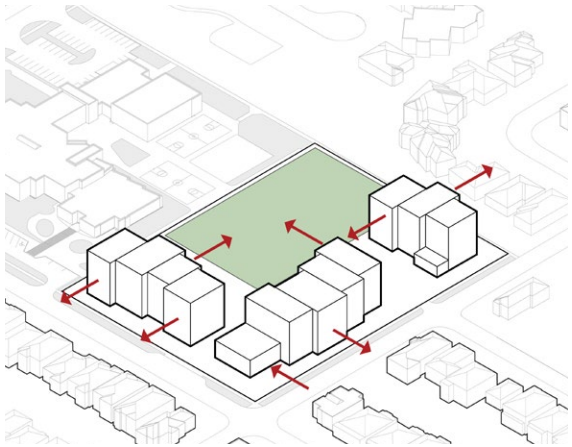
1. Overlaying traditional property line according to site fabric.



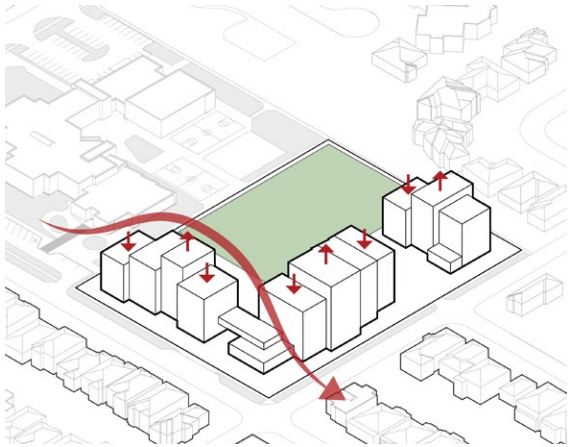
2. Modifying the grid to accommodate the open space.



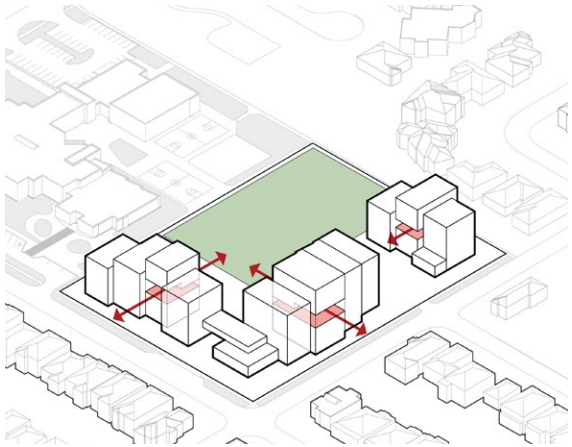
3. Create access to the open space.



4. Shifting the massing to correspond to the streetscape.



5. Adjusting building height to create smooth transitions between low and mid-rise.

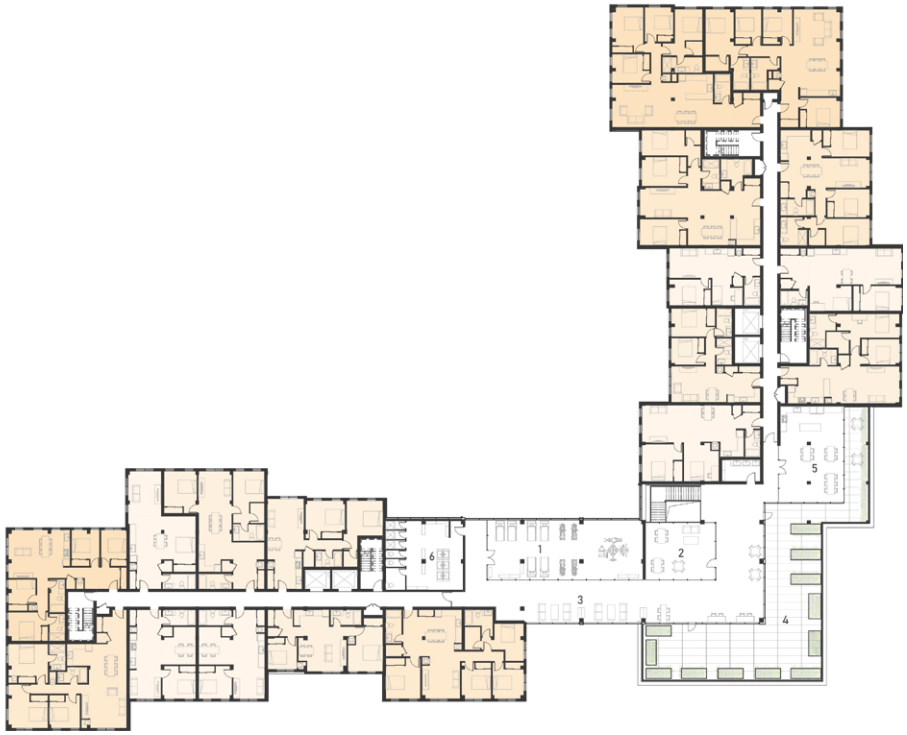


6. Voids create shared living space and visual connection at upper level.

Ground Floor

1. Plaza
2. Community Center
3. Multi-purpose Hall
4. Community Kitchen
5. Playroom
6. Resident Lobby
7. Cafe
8. Retail
9. Loft Unit

0 5 10 15 20



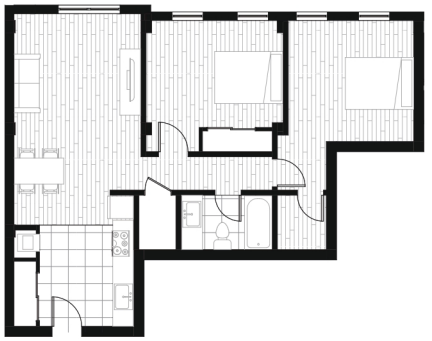
Second Floor
1. Gym
2. Multifunction Room
3. Library
4. Community Garden
2. Gathering Room
3. Changing Room

Fourth Floor
1. Lounge
2. Communal Garden
3. Gathering Room

1-Bed Room Unit / Studio
2-Bed Room Unit
3-Bed Room Unit
4-Bed Room Unit

Loft

1 Bedroom + DEN

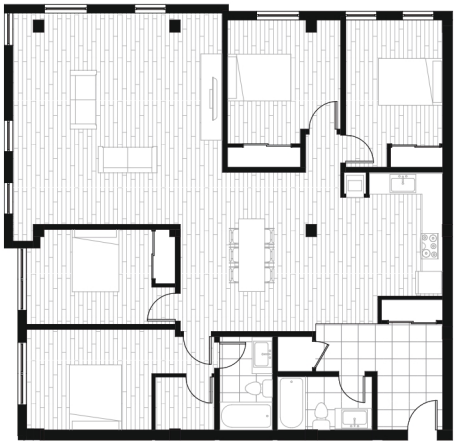


2 Bedroom

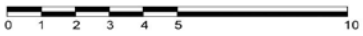
3 Bedroom

3 Bedroom

4 Bedroom



4 Bedroom



0 1 2 3 4 5 10

Building Assemblies

1. Exterior Wall

Exterior

25mm	Terracotta Cladding
25mm	Ventilated & Drained Air Cavity
153mm	Rigid Insulation
1mm	Air Barrier & Water Resistive Membrane
105mm	3-ply CLT Wall Panel
13mm	Interior Gypsum Board Finish

Interior

2. Soffit

Interior

25mm	Flooring Finish
50mm	Concrete Toping
139mm	5-ply CLT Floor Panel
1mm	Air Barrier & Water Resistive Barrier Membrane
153	Rigid Insulation
50mm	Soffit Panel

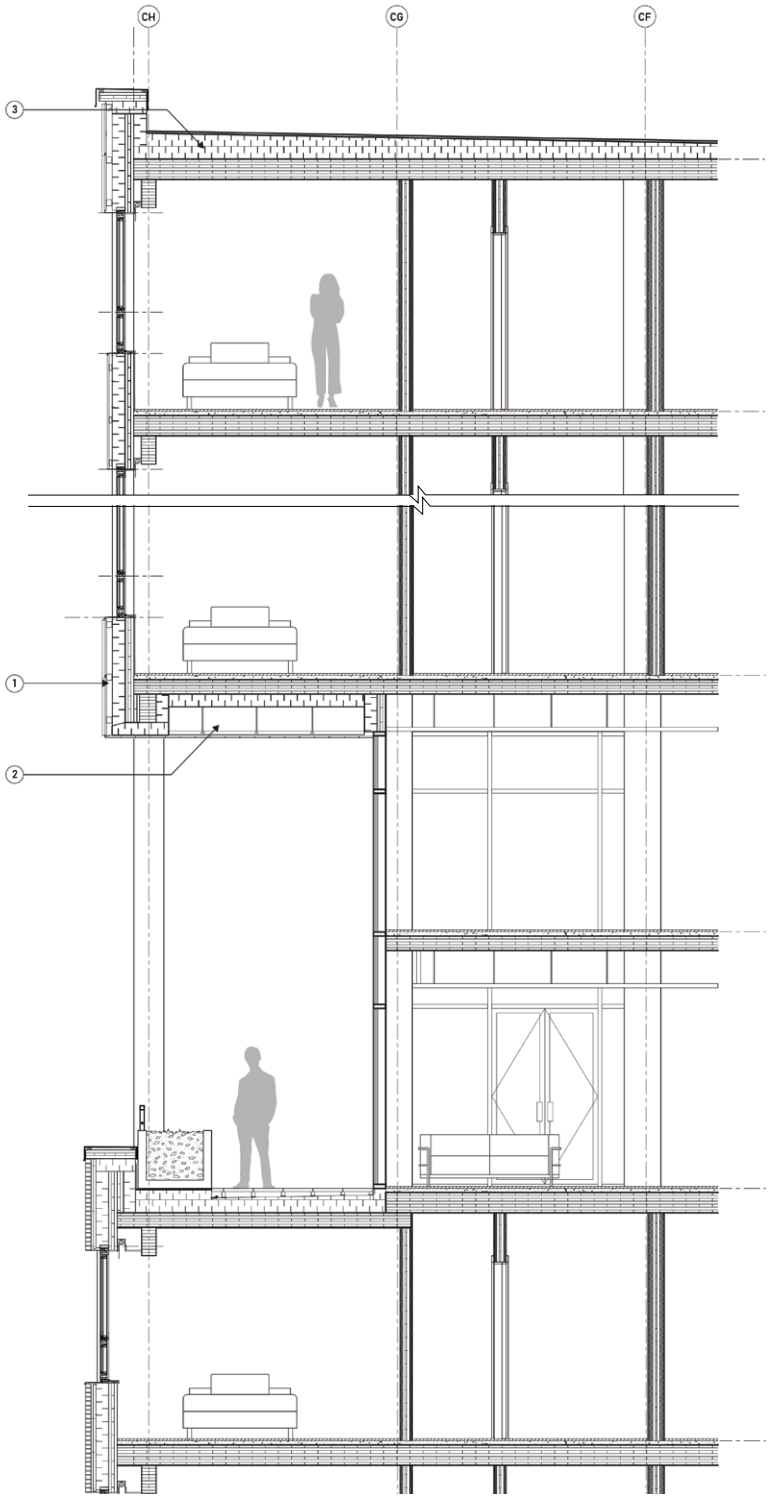
Exterior

3. Roof

Exterior

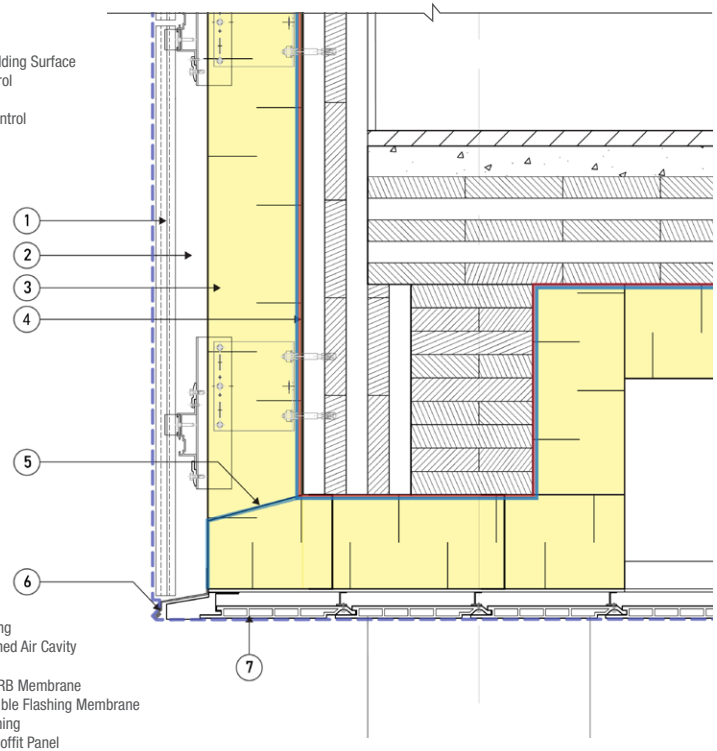
6.2mm	Bitumen Roofing Membrane
4.8mm	Asphalt Protection Board
153mm	Rigid Insulation
1mm	Air Barrier & Water Resistive Barrier Membrane
191mm	7-ply CLT Roof Panel
13mm	Interior Gypsum Board

Interior



Control Layer

- Water-Shedding Surface
- Water Control
- Air Control
- Thermal Control



Legend

1.Terracotta Cladding
2.Ventilated & Drained Air Cavity
3.Rigid Insulation
4.Air Barrier and WRB Membrane
5.Cross-cavity Flexible Flashing Membrane
6.Sheet Metal Flashing
7.Rice Composite Soffit Panel

Reimagining Downsview

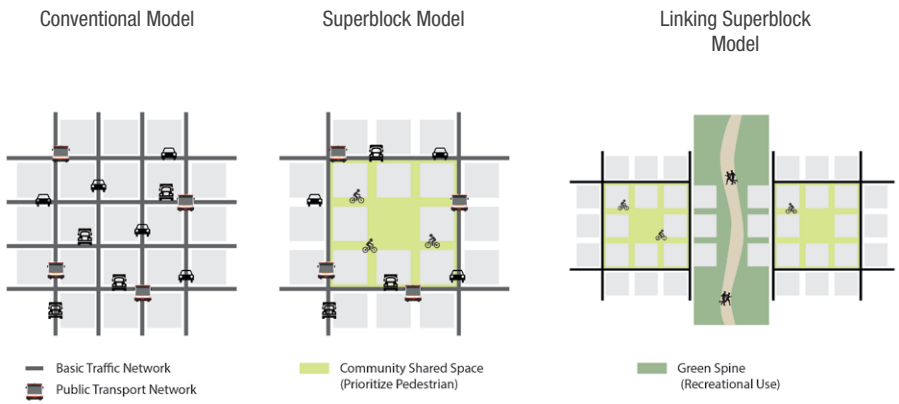
A Vision for Downsview's Pedestrian-oriented Community

M.Arch Studio
Location: Toronto
Collaborators: Erela Chan, Lixia Xu
Working Environment: Revit, Rhinoceros, Illustrator, Photoshop

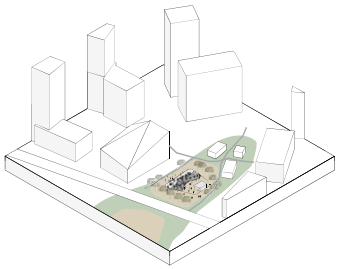
The project begins with the core concept of enhancing pedestrian experience within the linear site of Downsview, and seamlessly integrating nature into the urban fabric. The ultimate goal is to create a pedestrian-friendly urban environment where future inhabitants can effortlessly navigate the area and engage with nature.

The key element of this project is a green belt planned to accommodate a dedicated off-street cycling and pedestrian network. This green belt connects Downsview Park, three existing subway stations, and the entire superblock community. The super-blocks are meticulously designed with distinct programs to support the anticipated growth of the Downsview area. The east-west corridor emerges as a dynamic hub for social and cultural activities, whereas the north-south corridor is primarily designated for residential purposes. Vehicular roads are strategically planned to minimize inter-sections with pedestrian pathways, thereby fostering a vibrant and walkable urban neighborhood.

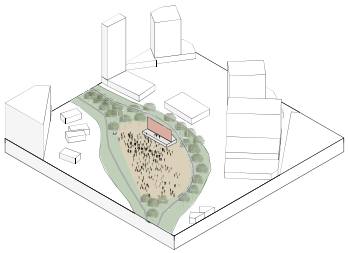
Design Principle



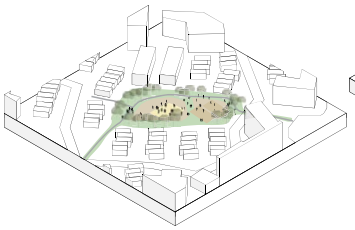
Openspace Typology



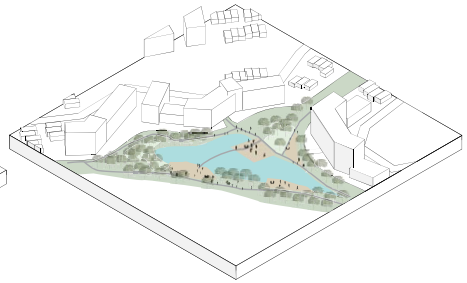
Amphitheater



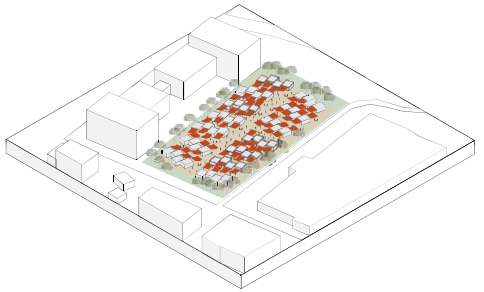
Plaza



Playground



Park



Market

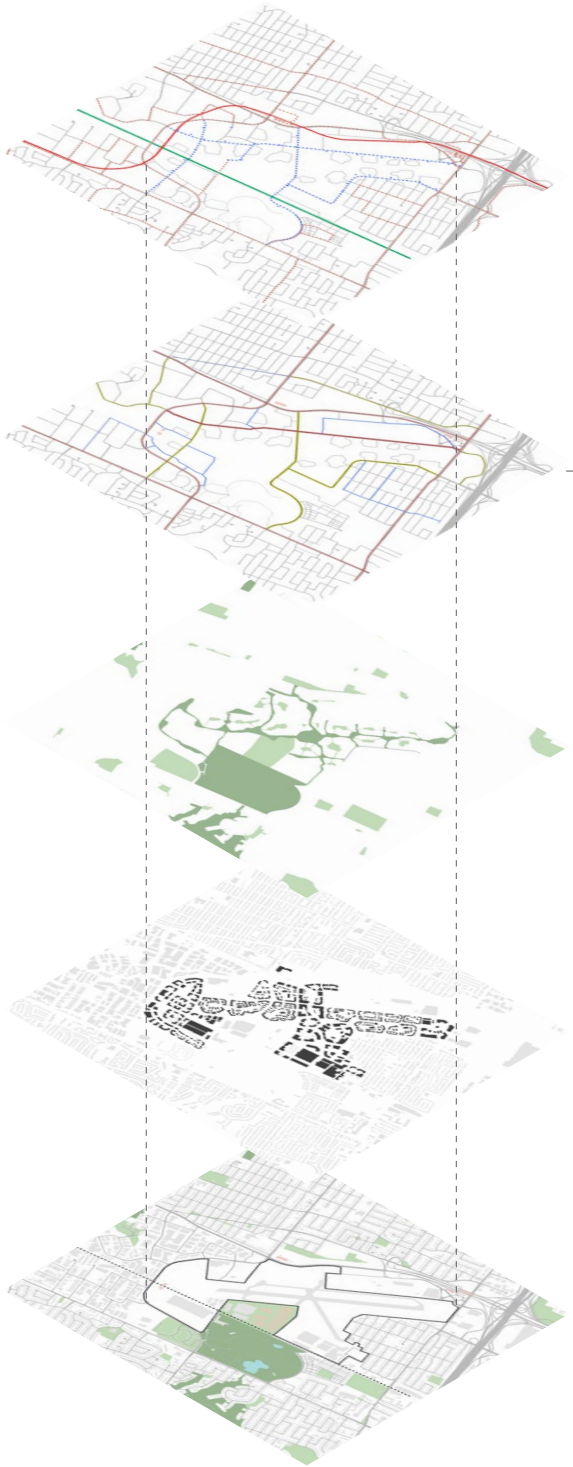
Public Transport Network

Primary Street Network

Green Connection

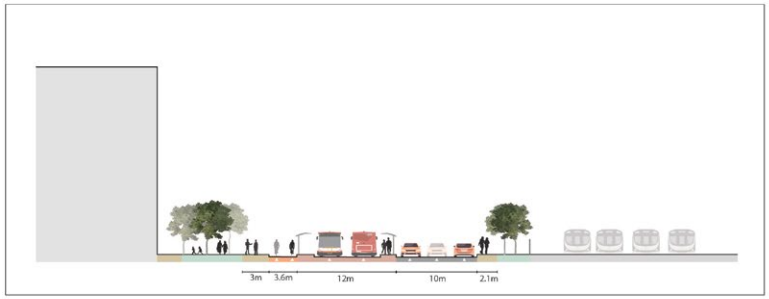
Built Form

Existing Site Context



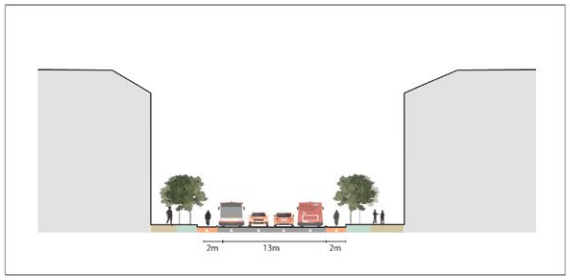
Proposed Street Section

Major Arterial Streets



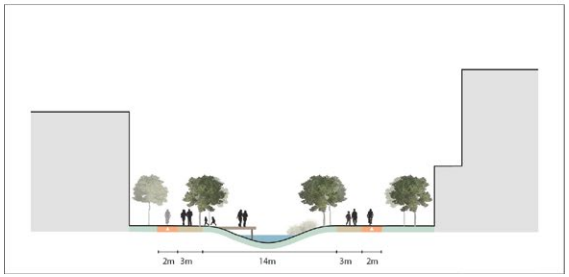
Vehicle Lane
Dedicated Bus Lane
Green Space
Pedestrian Path
Bicycle Lane

Minor Arterial Streets

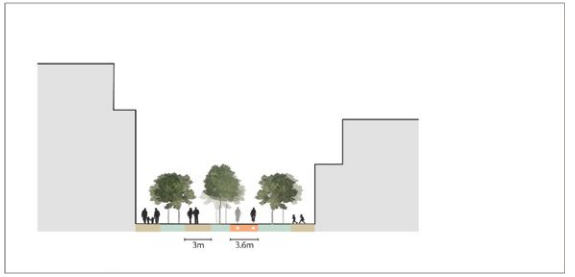


Collector Streets

Green Corridor



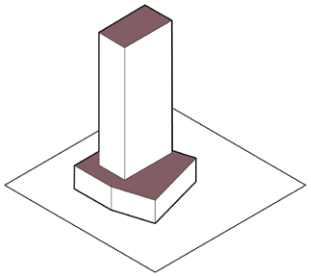
Local Pedestrian Streets



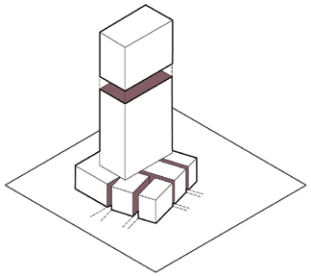
Medium-scale Architectural Scenario

The area near the Downsview Park Station was selected to develop further due to its strategic location where existing infrastructure, key landscape elements, and public programs converge. Community programs were meticulously planned and integrated with the office component of the project. This approach ensured that the development not only fulfilled its commercial objectives but also created space that contributed to the surrounding community.

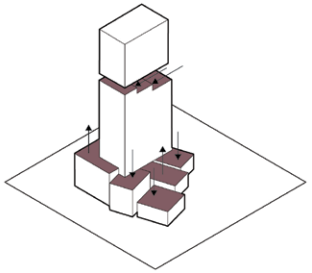
Design Strategy



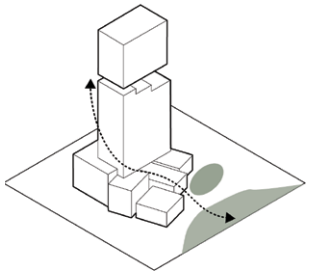
1. Conventional podium & tower.



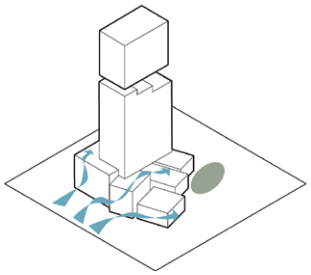
2. Breaking down massing into smaller scale.



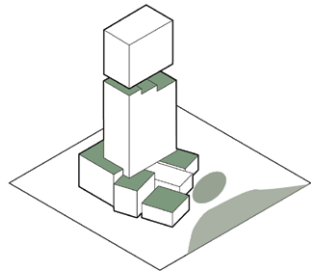
3. Adjusting the building form.



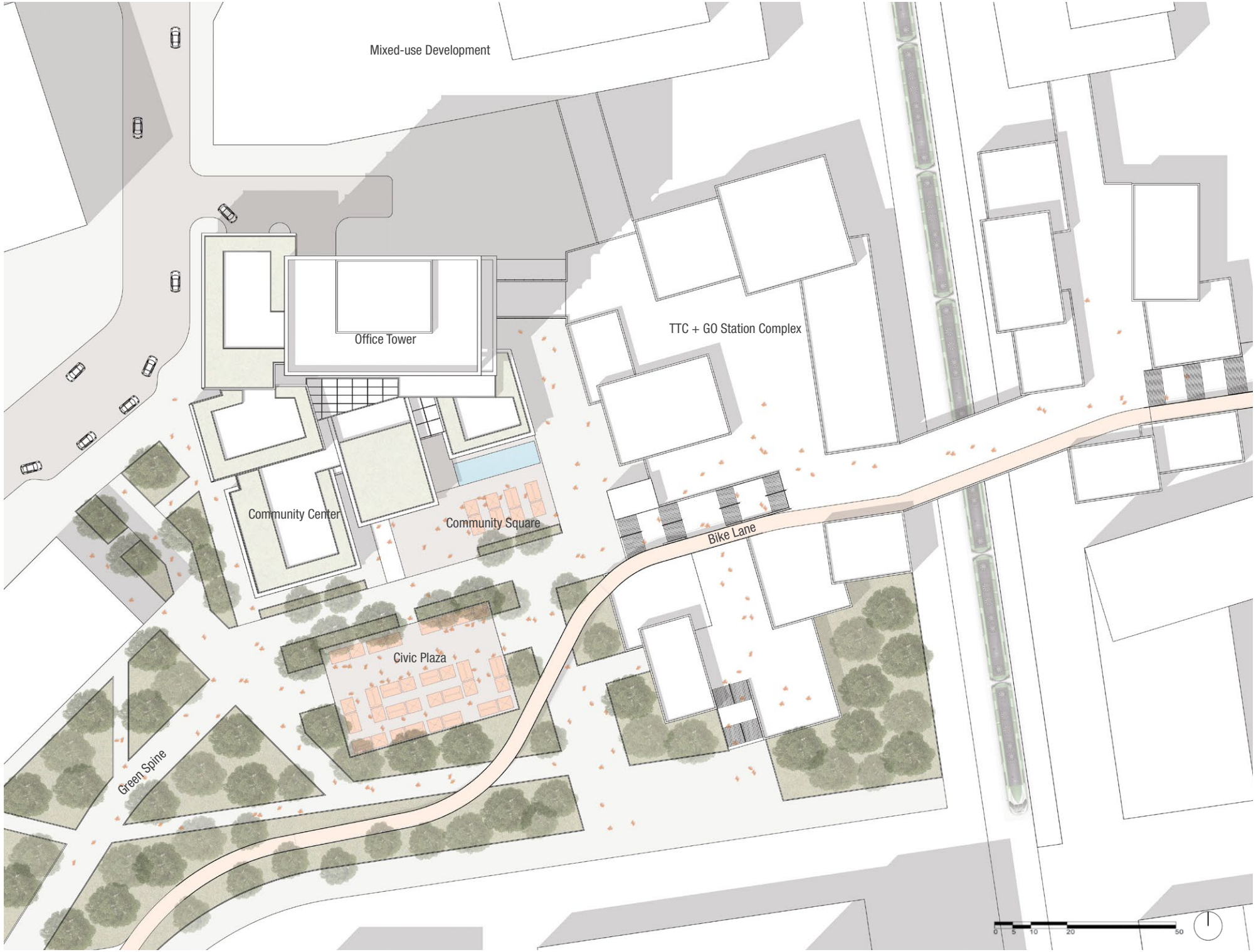
4. Connecting two different scale within the site - lower level open space to high rise development.

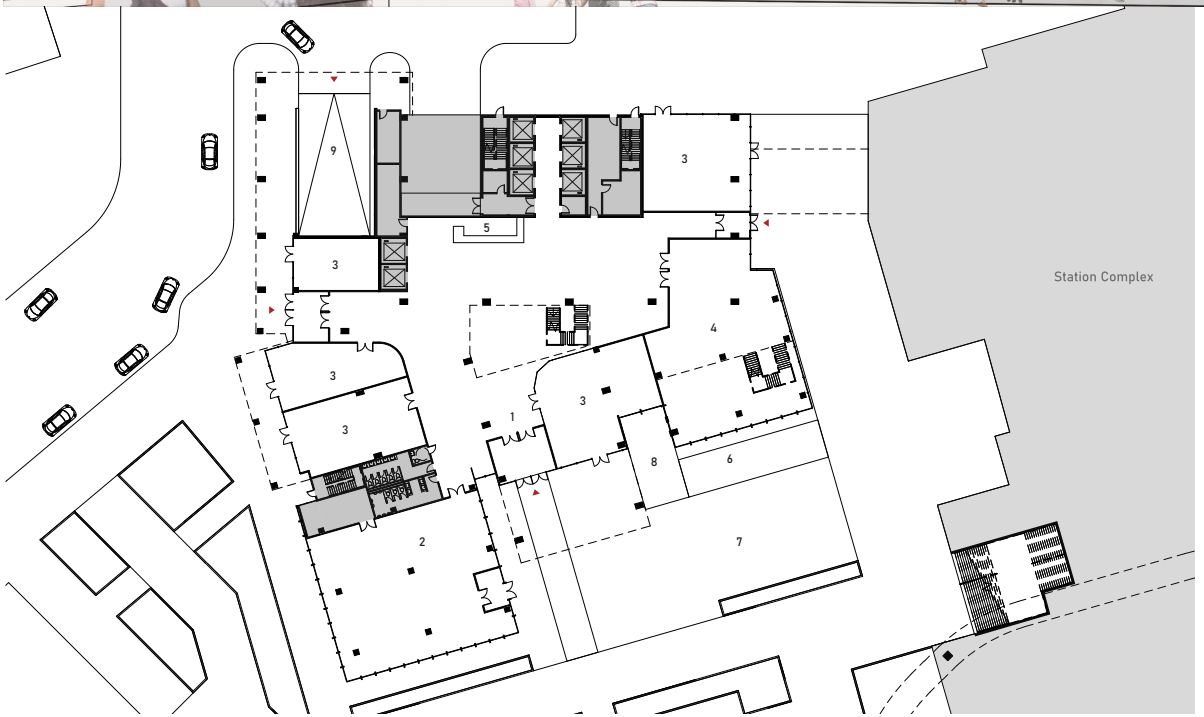


5. Using the massing of the building to create comfortable community square.



6. Stepped terrace to provide more green space.


Mixed-use Development
Office Tower
TTC + GO Station Complex
Community Center
Community Square
Bike Lane
Civic Plaza
Green Spine
0
5
10
20
50



First Floor
1. Main Entrance
2. Community Center
3. Retail
4. Job Resource Center
5. Service Counter
6. Water Feature
7. Community Square
8. Patio
9. Carpark Entrance

Second Floor
1. Multifunction Hall
2. Gym Room
3. Daycare Centre
4. Lounge
5. Job Resource Center
6. Multifunction Room
7. Co-working Space

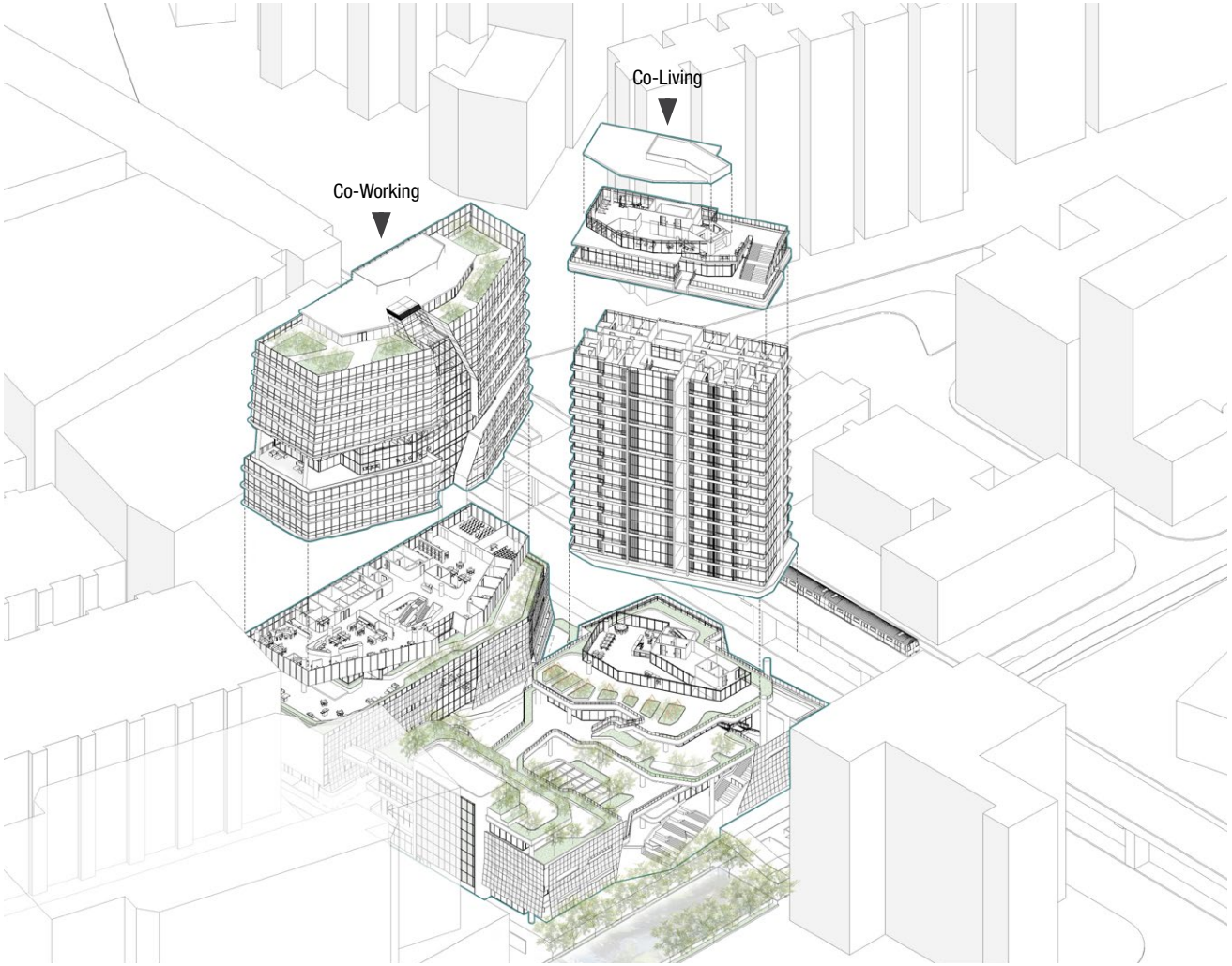
INCUBATOR

New Urban Community for Former Industrial District

BScAs Thesis
Location: Hong Kong
Working Environment: Revit, Illustrator, Photoshop

According to the city's latest redevelopment plan, Kwun Tong district will be revitalized and transformed into the city's second Central Business District (CBD). As one of the city's major industrial hubs in the late 20th century, the major challenge of this redevelopment initiative is how to revitalize this area in a way that supports the evolving needs of the modern community living.

The site located strategically close to the recreational green corridor along Tsui Ping River, a trail that also connects with the promenade. This project is conceived as a vital transition connecting the existing industrial/commercial with residential areas, while adding more green space to the urban fabric. The main goal is to develop a new urban typology for Kwun Tong that incorporates urban farming with other programs.



Urban Farm

+

Co-Living

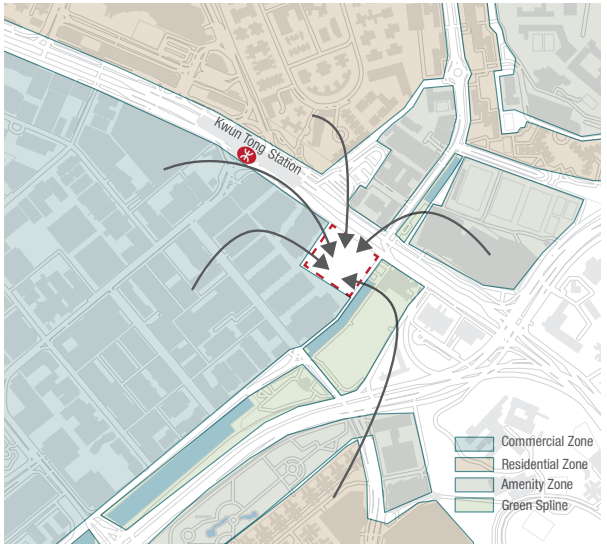
+

Co-Working

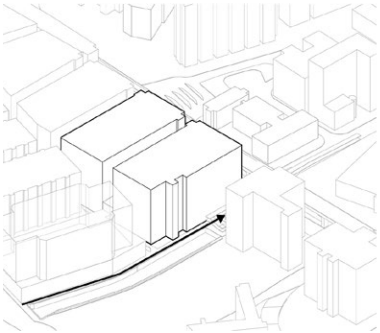
=

?

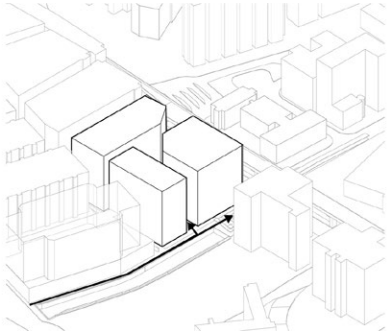
New Community for Kwun Tong



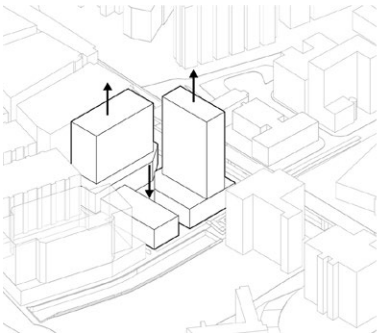
Design Strategy



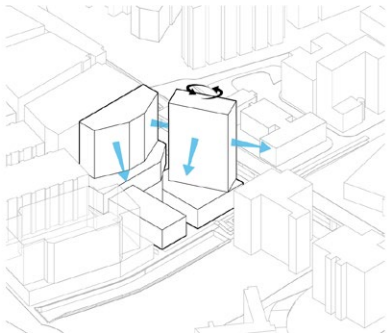
1. Existing Block.



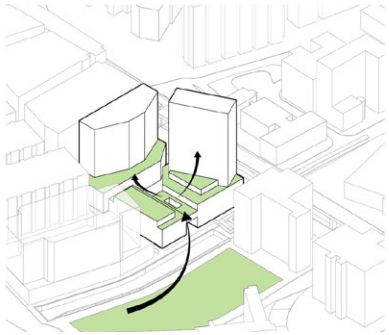
2. Split up the Block.



3. Volume Adjustment.



4. Views.



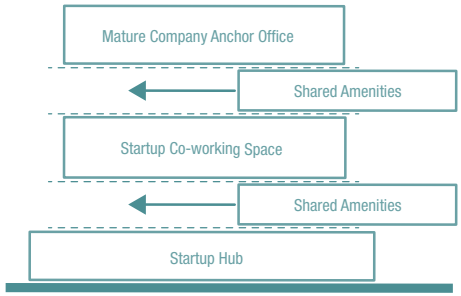
5. Green Connection.

Podium Plan

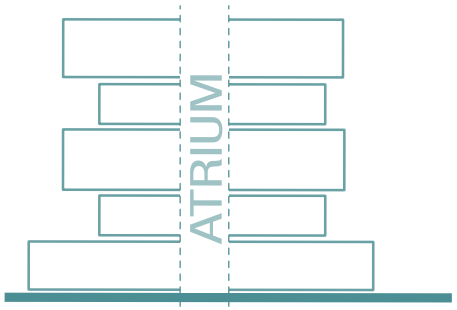
1. Urban Farm
2. Community Kitchen
3. Resident Lift Lobby
4. Sky Terrace
5. Green Deck
6. Rain Garden
7. Startup Co-working Space

Co-Working Tower Concept Diagram

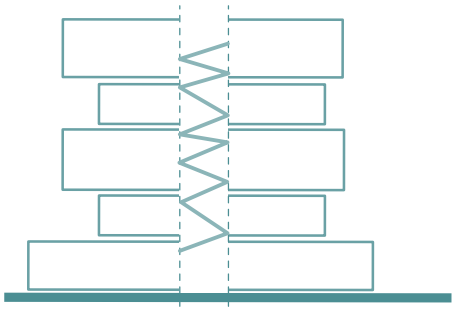
1. Building program follows the evolution of a company.



2. Adding shared amenities to enhance social interaction.



3. Atrium void brings sunlight and creates vertical connection in the building.



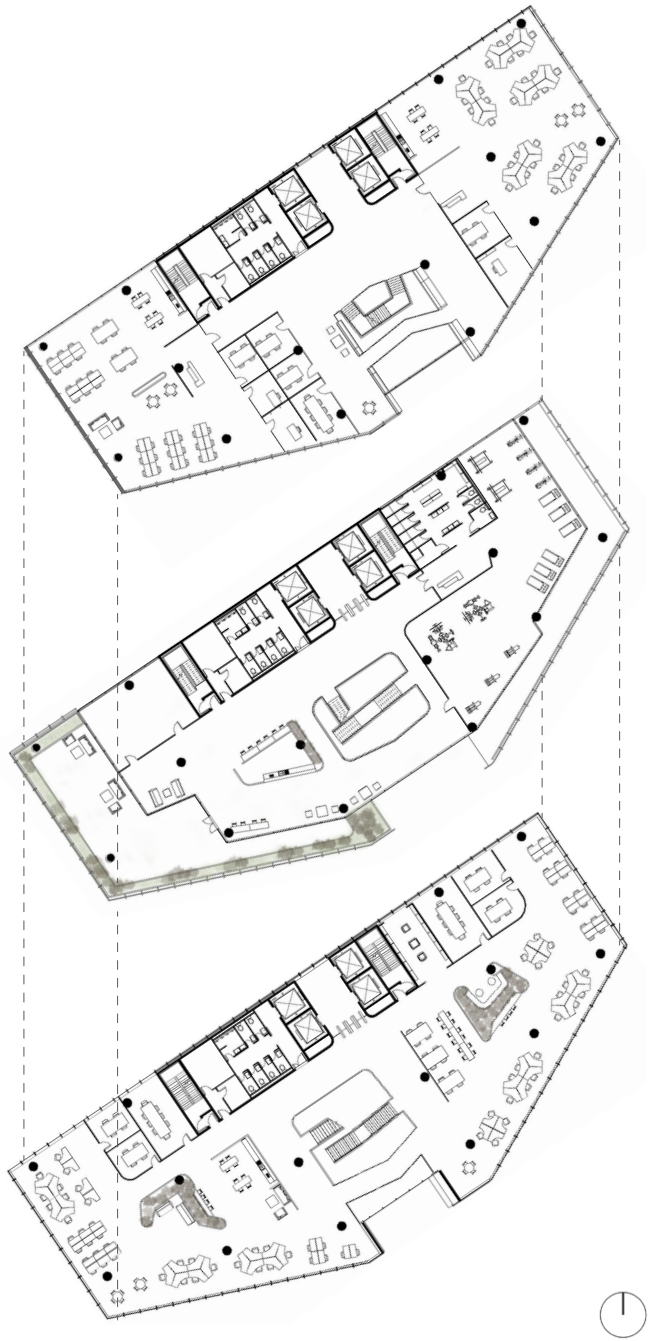
4. Stairs enhance the vertical circulation inside the building.

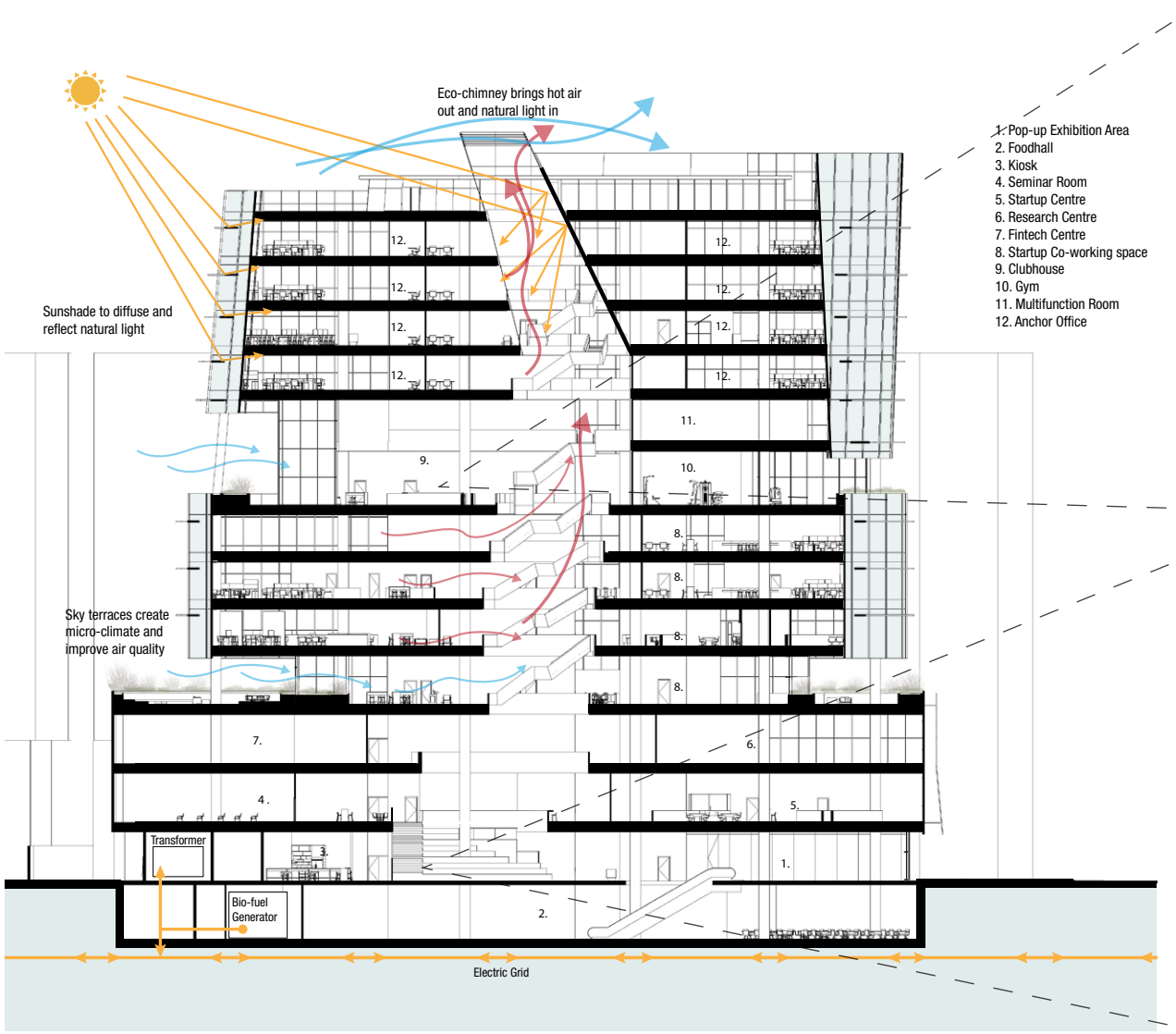
Co-Working Tower

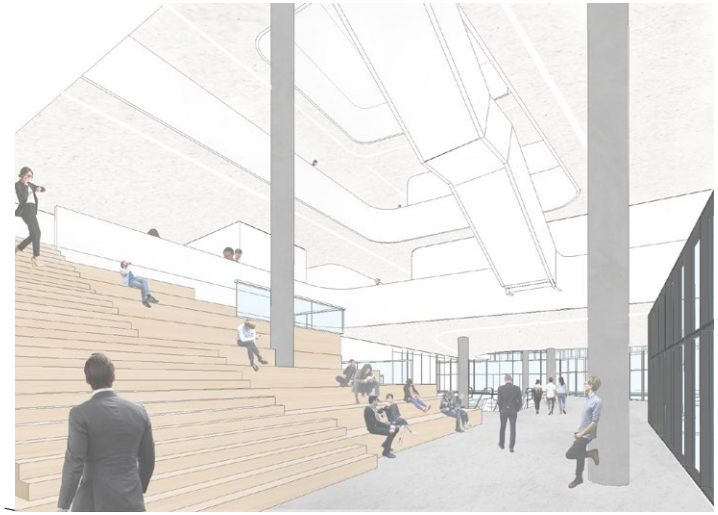
Office
(Floor 9 to Floor 12)

Clubhouse
(Floor 7 and Floor 8)

Start-up Co-Working Space
(Floor 4 to Floor 6)

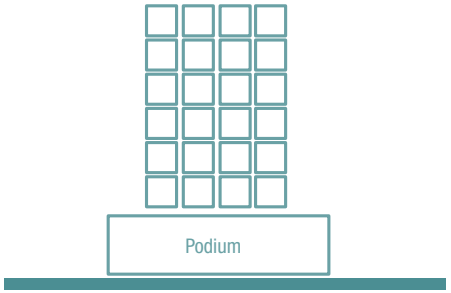




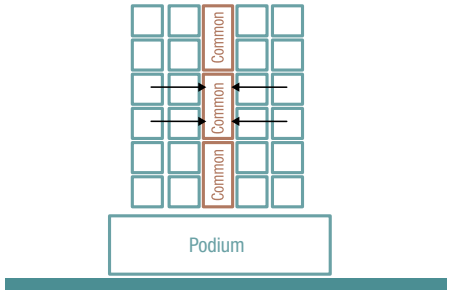


Top: Clubhouse
Bottom: Entrance Lobby

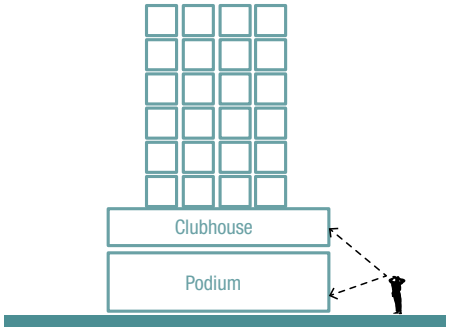
Co-Living Tower Concept



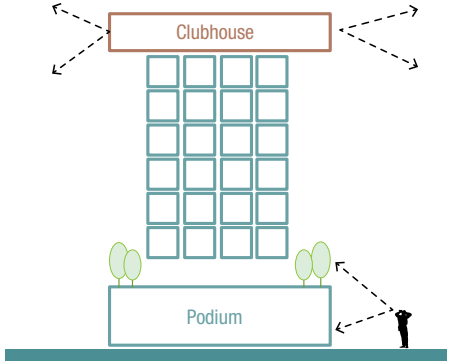
1. Typical planning of residential units
-Lacking interaction space for residents.



2. Adding shared space to facilitate social interaction between residents.

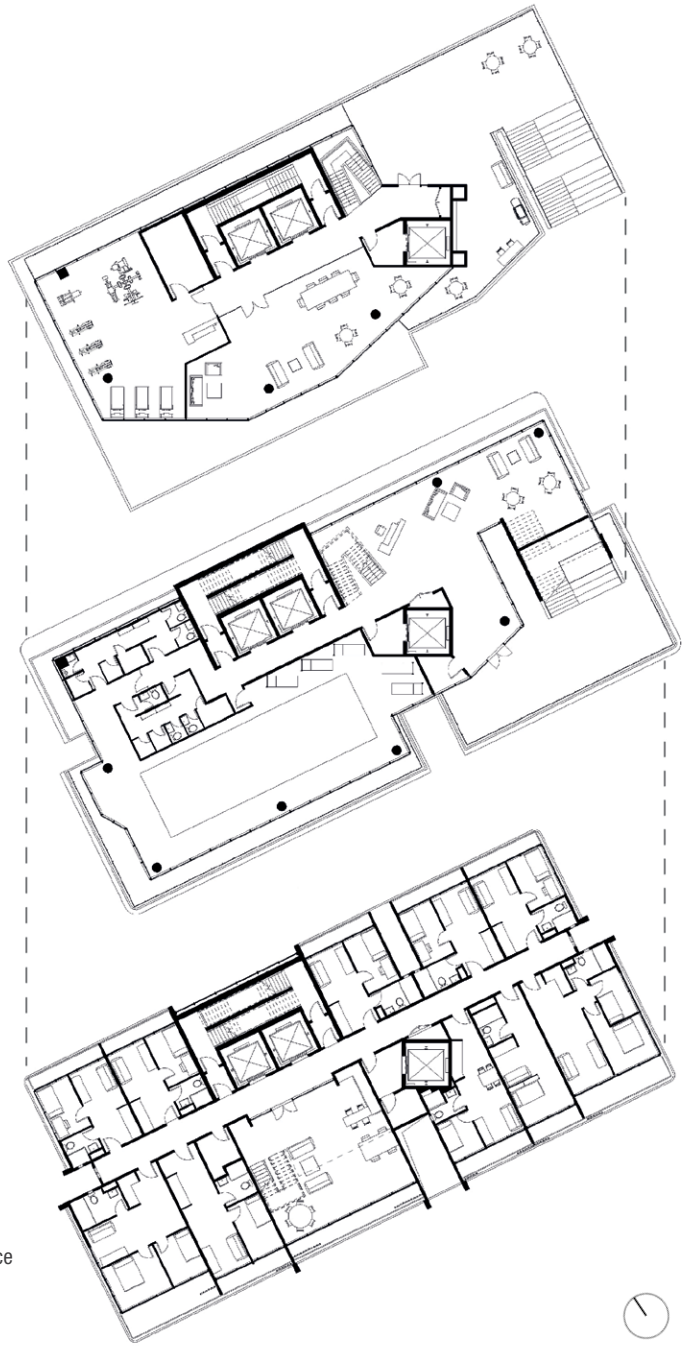


3. Typical planning of clubhouse - blocking the views.



4. Relocating clubhouse to the roof for create better pedestrian experience.

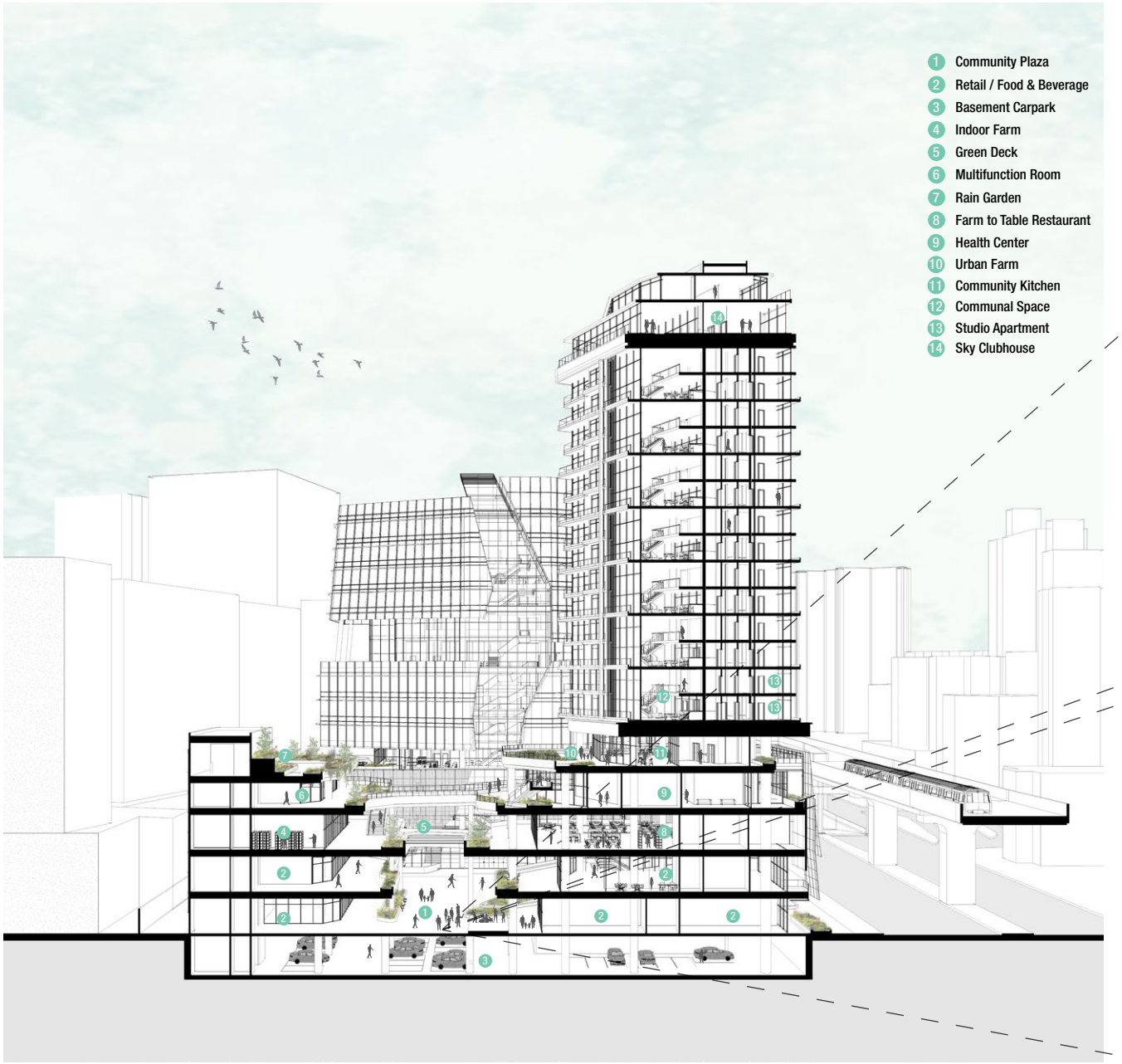
Co-Living Tower



Upper Clubhouse
(Floor 20)

Sky Clubhouse
(Floor 19)

Typical Co-Living Unit with
Double Height Shared Space
(Floor 5 to Floor 18)



Community Plaza - Day and Night

The community plaza is a public and pedestrian-friendly ground plane sheltered by several green decks above. It is conceived as an urban living room for the local community, and a venue for weekend pop-up markets and various events.

Thank You !

I would like to extend my sincere appreciation to everyone who has taken the time to review my portfolio. I am grateful for the opportunity to share my passion for architecture with you. Thank you for your time and consideration.

+1 (437) 999-7141

thaddeuswhchu@gmail.com

linkedin.com/in/thaddeuschu/